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Lewis Pressurized, Fluidized-Bed Combustion Program—Data and Calculated Results

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LEWIS PRESSURIZED, FLUIDIZED-BED COMBUSTION PROGRAM -

DATA AND CALCULATED RESULTS

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SUMMARY

A 200-kilowatt (thermal), pressurized, fluidized-bed (PFB) reactor and research test facility were designed, constructed, and operated by the NASA Lewis Research Center. The facility was established as part of a NASA-funded project to assess and evaluate the effect of PFB hot-gas effluent on aircraft turbine engine materials that may have applications in stationary powerplant turbogenerators.

The facility was intended for research and development work and was designed to operate over a wide range of conditions. These conditions included the type and rate of consumption of fuel (e.g., coal) and sulfureacting sorbent material: the ratio of feed fuel to sorbent material; the ratio of feed fuel to combustion airflow; the depth of the fluidized reaction bed: the temperature and pressure in the reaction bed; and the type of test unit that was exposed to the combustion exhaust gases.

This report presents the test data obtained in carrying out over 200 different tests in a 2-year period. Some of the tests involved the interrelationship of the various operating parameters on reactor performance, other tests were carried out after making physical changes in the configuration of the reactor and/or gas cleanup system, and still other tests involved steady-state, endurance testing of component materials being investigated.

The report includes a description of the data acquisition and control instrumentation and how the instrument signals were used in making calculations. The procedures used in making these tests, including variations between one test series and another, are also described in this report.

NASA has terminated its in-house experimental PFB research, and the facility has been deactivated. The efforts put forth in this program may be of benefit to others who are considering such work for eventual commercial development of the fluidized-bed combustion concept. Many of the technical problems solved in this small facility are expected to be scalable to larger research or commercial facilities.

INTRODUCTION

This report presents the data and performance of a pressurized, fluid-ized-bed (PFB), coal-burning combustor that was operated at the NASA Lewis Research Center. The PFB facility was used to furnish high-pressure, high-temperature combustion gases for the evaluation of gas turbine components. Hot-combustion-gas-using turbines have a potential use in future coal-burning power generation plants (ref. 1). In such applications, the turbine components will be subjected to gases containing more contaminants and corrosive substances than current hot gas turbines experience. The Lewis PFB facility

was the first to flow over 1500° F gases through an operating gas turbine

for long durations.

The PFB combustor is of interest because it is capable of in-situ coal-sulfur capture without the use of postcombustion gas cleanup systems. It has the ability to operate at a higher thermal efficiency and at lower operating temperatures than conventional coal-burning combustors (ref. 1). The PFB combustor also has application in cogeneration powerplants that use the hot combustion gases to provide electric power and steam for heating (ref. 2).

The Lewis PFB facility incorporates a 200-kilowatt (thermal) research combustor with several distinguishing features. It uses a tapered conical combustor design that has increasing cross-sectional bed surface area with reactor height. This results in a lower combustion gas bed exit velocity and theoretically lower bed particle entrainment while maintaining the essential PFB characteristics. The combustor has the capability of operating with different types of coal and sulfur sorbent and at any desired constant bed depth.

The physical characteristics and operating procedures used to date with the Lewis PFB facility were reported by Kobak and Rollbuhler (ref. 3). This report describes the tests done in this facility and the data obtained. Some of the tests were carried out to ascertain the combustor performance characteristics, other tests were performed to check out the combustion gas cleanup system, and still other tests involved turbine component life

testing.

In this report the data acquisition system parameters and the data sources are described and located in table 1 and figures 1 to 11. Then the equations used to obtain calculation results from the measured data are presented in table 2. The sequence of tests carried out in this program and the key operating parameters of each test are listed in table 3. The test data and calculations from each of these tests have been combined into groupings associated with a particular part of the PFB system (combustor solids input information, combustor temperatures and pressures, etc.) and are presented in table 4. The solid materials associated with the PFB testing (e.g., coal, limestone, bed residue, and combustion gas flyash) were collected, weighed, screened for size, and chemically analyzed for many of the tests, and the results are listed in tables 5 to 10. The information presented is for a program that was carried out from mid-1977 to mid-1979.

Reports have been previously published covering certain specific interest areas of the PFB testing. Initial test results were reported by Priem, Rollbuhler, and Patch (ref. 4). A comparison of theoretical and experimental results in particle carryover was written by Patch (refs. 5 and 6). The characteristics of the PFB control system have been described by Kobak (ref. 7). Results of various gas cleanup techniques were reported by Rollbuhler and Kobak (ref. 8). And the corrosion-erosion behavior of turbine components during life tests can be found in reports by Zellars, Rowe, Lowell, Benford, and Rollbuhler (refs. 9 to 11). This report does not attempt to draw any conclusions but presents all the measured data and calculations for the entire NASA PFB program as a microfiche supplement (table 4).

DATA ACQUISITION PARAMETERS

Data from the Lewis PFB facility were generated from over 150 thermo-couples, 45 pressure transducers, 10 fluid-flow-measuring transducers, 8 load cells, and an assortment of valve- and switch-actuated positioners,

rotation transducers, accelerometers, and gas analyzer signals. The data signals from these sources were recorded on high-speed data accumulators; each signal was associated with a particular data channel. There were over 200 channels being used. The data were recorded digitally at selected times in a given test. The accumulator, or recorder, could scan and record the 200 data channels in less than five hundredths of a second. Along with recording the data at selected time intervals, key data values were transmitted to a high-speed digital computer for processing into engineering expressions and performance calculations.

The data parameters are listed in table 1. The table has been divided into sections representative of various segments of the PFB facility. These

segments are

1(a) - Combustor input solids data

1(b) - Combustor input air system data

- 1(c) Combustor temperature and pressure data
- 1(d) Combustor wall temperature data
- 1(e) PFB system solids discharge data
- 1(f) PFB coolant system data
- 1(g) Combustion gas system data
- 1(h) Combustion gas analyzing system data
- 1(i) PFB test unit data

In each section, or table subdivision, the data parameter recording channel number is listed along with the tests in which the particular parameter applied. Over the program lifetime some parameters were dropped and new parameters put on the same data channel. Sometimes the parameter was switched from one channel to another and at other times the parameter transducer and/or its operating range was changed.

The locations of the parameter transducers are presented in figures 1 to 11. An overall schematic of the Lewis PFB combustion system is shown in figure 1. The main portions of it are the reactor vessel or combustor, the coal and sorbent feed system, the combustion gas cleanup system, the test section, the combustion gas cooldown and vent system, and the component water coolant system. A detailed description of the construction and test operation of these systems is presented in reference 3. Figures 2 to 11 show each of the PFB subsystems in schematic form and the general location of the data-producing transducers. At each measuring transducer location in the figures, a system identification number and the data-recording channel (DC) number are given. The thermocouple identification numbers contain the letter K, T, or R, referring to thermocouple type (K = Chromel-Alumel, T = copper-constantan, and R = platinum-rhodium).

The combustor input solids flow rates (coal and sorbent materials) into the combustor were determined in two ways: from changes in the supply hopper weights over the total time of a test, and from fuel hopper incremental weight readings. The input solids parameters are listed in table 1(a) and identified in figures 3 and 4. The PFB discharge solids were (1) the combustor bed material that was being "skimmed" off the bed surface so as to maintain a constant bed depth, (2) the combustor bed contents that remained in the combustor at the test conclusion, and (3) the combustion gas particles that were captured in the PFB cleanup system. The discharge solid parameters are listed in table 1(e), and the data locations are noted in figures 5, 7, and 11.

The combustor input gas flow during normal operations was heated compressed air. Its flow rate was determined by measuring the air's temperature and pressure and a venturi pressure drop as listed in table 1(b) with

the parameter data locations shown in figure 6. The combustor output gases either flowed through a cleanup, cooldown system and vented to the atmosphere or they flowed through a cleanup system, a test section, and a cooldown system and then vented. The combustion gas parameters are listed in table 1(q) and the transducer locations are presented in figures 7 and 11.

The combustor, or reactor vessel, internal pressure and temperature parameters are listed in tables 1(c) and (d). The temperatures were obtained from thermocouples inserted at various combustor heights into the unit's interior. The thermocouples were protected with Hastelloy jackets. Other thermocouples were located within the reactor refractory and insulated walls. The location and depths are noted in figure 2 and table 1(d). The wall temperatures were used to calculate wall heat transfer rates. Besides measuring the combustion gas absolute pressure values, we determined differential pressures across various portions of the combustor bed.

To initiate combustion within the PFB reactor, a natural gas and compressed-air burner was utilized. It was built into the bottom of the reactor and is shown in figure 8. The instrumentation, which included flow-meters, thermocouples, and pressure transducers, gave information of concern in starting the PFB operations. The operations engineer monitored the startup conditions so as not to exceed certain PFB operating limits. These data parameters are not included in this report because they do not apply to the steady-state PFB testing. More information on starting the PFB is presented in reference 3.

The PFB combustor was kept at steady-state operating temperatures and pressures by controlling the fuel and air flow rates and the heat removal rate from the reactor. The heat removal was accomplished by regulating the cooling water flow rate through and around the reactor. The coolant flowed through internal combustor heat exchangers ("rakes"), which could be varied in number and location within the combustor. The water coolant flow rate and temperature-measuring parameters are listed in table l(f) and shown in figure 9. Normally not all the available coolant rakes would be used; in fact for the last series of tests, none of them were used. The reactor outer wall was wrapped with a water coolant line that was also instrumented.

As part of the test procedure the combustion gases within and those leaving the combustor were monitored for their composition. A portion of the gases was continuously withdrawn from the system and passed through the gas analyzer. The analyzer determined the concentrations of hydrocarbons, nitrogen oxides, sulfur oxides, carbon monoxide and dioxide, and oxygen. These concentration parameters and other pertinent data concerning the analysis are listed in table 1(h). A schematic of the gas analysis system is shown in figure 10. The gas sample line between the system components was kept warm enough to avoid possible product condensation within it.

The schematic of the turbine component testing system is presented in figure 11. The instrumentation parameters associated with this testing are listed in table 1(i). This testing generally required additional gas clean-up of flyash carryover from the combustor. This was done upstream of the component test units, using a two-stage, cyclone, gas-solids separator plus an optional ceramic filter assembly in series between the combustor gas exit and the component gas input port. The test component unit temperatures and pressures were measured, and instrumentation was provided for taking turbine spinup and braking data. The control of the spin rate was a critical operating parameter.

The instrumentation was set up not only to provide test data but also to serve as a safety system. The key parameter instrumentation was calibrated

daily. The control data values had to remain within specific minimum and maximum values at specific times during a test sequence; otherwise an audible and visual alarm would occur and corrective action would have to be made within a given time before the PFB control system would initiate shutdown procedures. Key data and calculations were displayed in the PFB control room for the operator's use. More information about the operational controls and safety features can be found in reference 7.

DESCRIPTION OF THE DATA CALCULATION PROCEDURES

Once the test data had been obtained, they were not only recorded but many of them were used in calculations determining the performance level of the PFB systems, the system thermodynamics, and the operational rate of change in the processes. These calculations were made by using the formulas listed in table 2.

Calculating the combustion performance and fuel-burning efficiency required knowing the flow rates of the fuel and air entering the combustor and measuring the combustion gas chemical and physical conditions. Determining the actual fuel flow rate proved to be the most difficult calculation. The PFB fuel feed unit was designed to auger a physical volume of material into the combustor per unit of time, but there was no instantaneous rate-measuring flowmeter to verify that this was occurring. Solids flow rate had to be determined from changing fuel hopper weight signals. The rate was determined by using a least-squares fit calculation (CALO5 in table 2) of the changing fuel hopper load cell signals over a finite time span. The longer the time, the more load cell signals that could be fitted into the calculation and the more trustworthy the flow rate answer became. It actually amounted to an average flow rate over the time increment being considered. During this program two different signal acquisition systems were used for this calculation. One was known as the "Modicon" system and the other as the "Escort" system. The Escort system could take more weight signals in a given time to make the calculation than could the Modicon, and therefore more reliance was put on its results.

The fuel itself was a variable mixture of coal and sulfur-retaining ("sorbent") minerals. The solids ratio in this mixture was set by batch mixing of weighed quantities of each component and mechanically blending the solids. The other factor in the combustion process, the air, had its flow rate and density determined continuously from standard venturi flow equations (CALO4).

The combustion efficiency (CAL72) was determined from the available energy in the input coal and the amount of this energy that remained in the combustion gas and solid discharge materials. This involved knowing not only the chemical composition of the combustion products but also the quantity and composition of the partially reacted solids entrained in the gases. The solids in the gases (i.e., flyash) were collected and analyzed at an analytical laboratory. Measurement of the actual combustion gas flow rate (CAL37) was attempted, but the gas flowmeter pressure ports had a tendency to plug with the fine flyash. It was therefore assumed that the combustion gas flow rate was equivalent to the input air flow rate and that the volatile portion of the burning coal was fully oxidized in the air stream.

The PFB heat transfer rates and coefficients were calculated for the heat being removed from the combustion process by the reactor coolant rakes (CAL26, 27, and 30), the heat flowing through the reactor walls (CAL28 and 30), and the heat being carried out of the system in the combustion

gases (CAL38). Miscellaneous heat transfer rates were calculated for the other heat transfer units in the PFB system (CAL29). A large amount of heat was lost through the component walls; therefore the calculated thermal balance for the entire PFB system (CAL58) amounted to about three quarters of the total potential energy in the fuel.

The chief objective during the turbine component testing was to determine the time before turbine material changes began occurring. The combustion gases were therefore held constant, as much as possible, in flow rate, temperature, pressure, and composition over the test lifetime. Calculations were made of the rates of erosion and deposition on the component surfaces. These calculations were based on physical measurements made at intermediate test shutdown times. The samples were chemically analyzed during and after testing. Data on the turbine component tests can be found in references 9 to 11.

TEST SEQUENCE

The complete listing of all tests carried out in the Lewis PFB facility is given in table 3. The listing shows that the testing consisted of two chief phases: (1) testing of the PFB combustion process variables (test series A to N) and (2) time duration testing of gas turbine sample components (test series TB1, TB2, T3, T4, T5, T6, T7, and CASO to CASA).

The testing was usually done on a continuous basis from Monday through Friday with the weekend used for examination of the test samples and the system components. Starting the PFB on Monday used approximately 6 hours before steady-state test conditions were achieved and test data could be recorded. For any test series the combustion bed depth, the type of coal, the type of coal-sulfur sorbent material, and the extent of internal reactor cooling were kept constant. The combustion bed depth was held at a constant level during a given test series except when the combustion gas velocity was excessive and large quantities of solids were being blown out of the reactor.

For the combustion process tests, A to N in table 3, two types of coal were used: Pittsburgh seam No. 8 and Ohio seam. Two types of coal-sulfur sorbent materials were used: pure granular limestone and dolomite. The sorbent-coal ratio, in the fuel put into the reactor, was varied between 0.06 and 0.30.

During a given test series the combustion bed depth was preset to be maintained at some fixed level between 44 and 97 inches. The number of reactor internal coolant rakes was also held constant during a test series from zero to six.

During any test series the fuel-air ratio, the sorbent-coal ratio, the combustion pressure, the fuel flow rate (and combustion temperature), and the combustion air temperature and flow rate could be and were varied. In a given test series the fuel-air ratio was set between 0.04 and 0.10, the combustion pressure operating range was 40 to 90 psia, and the combustion temperature was held to some approximate value between 1500° and 1900° F by the quantity of fuel (10 to 80 lb/hr) injected into the reactor.

Each test was carried out at close to steady-state operating conditions for 2 to 6 hours. During that time span, data were recorded at intervals - usually 1/2 hour apart. These recorded data were given a reading number every time a data scan was made. Thus each test included six or more readings. The data reading numbers are listed for each test in table 3.

A variable in some tests was the input combustion air temperature. It was usually set at about 100° F by passing a portion of the incoming com-

pressed air through an exhaust gas heat exchanger and then remixing the heated air with the remaining ambient-temperature input air. If all the incoming air was passed through the heat exchanger, the input combustion air temperature could be increased to about 300° F.

For the turbine component tests it was desired to hold all the operating conditions at fixed values over the test duration. The test duration varied depending on how well the test samples held up in the combustion gas environment. This included testing of material samples in a cascade test unit (tests CASO to CAS4), testing of turbine sample blades rotating in uncleaned combustion gases (tests TB1A-F and TB2A-G), and testing of research material rotors in a gas turbine (tests T3 to T7 . The final turbine test (T7) involved the longest exposure time of a given turbine test rotor to hot combustion gases – over 400 hours.

TEST DATA AND RESULTS

The test data values, in engineering terms, and the calculations obtained from the data, are presented in table 4 for the tests listed in table 3. Table 4 has been divided into sections similar to the way the data parameters were divided in table 1; that is,

- 4(a) Combustor input solids data
- 4(b) Combustor input air system data
- 4(c) Combustor temperature and pressure data
- 4(d) Combustor wall temperature data
- 4(e) PFB system solids discharge data
- 4(f) PFB coolant system data
- 4(g Combustion gas system data
- 4(h) Combustion gas analyzing system data
- 4(i) PFB test unit data

Table 4 is included as a microfiche supplement to this report.

The data and results are average values for each test. As mentioned in the test sequence section, each test data value has been obtained by averaging the data values obtained in six or more test readings made during the steady-state testing time. It was attempted to keep operating conditions at a steady-state level during that portion of each test when readings were being obtained. The degree that this was attained is indicated by the standard deviation value listed together with the average test data value.

The data were recorded at a higher degree of precision than could reliably be expected from most of the instrumentation. Therefore the data values are presented only to the extent of expected accuracy. Those test data value locations where obviously erroneous data were being recorded are footnoted in the table. Those test data value locations where data were not recorded for that parameter during the test are also footnoted in the table.

The calculation values reported were determined by a computer for each test reading, and then the reading values were averaged for the test that included those readings. The standard deviation was also determined for the calculations that comprised the given test.

The data and calculations are presented for all the tests done in the Lewis PFB facility. No attempt is made in this report to interpret these data or calculations. Interpretations of particular portions of this information can be found in references 4 to 11.

PFB SOLIDS ANALYSIS

An important factor in the operation of a PFB system is what is happening to the solid materials being introduced into the system. The input solids are the coal and the coal-sulfur sorbent material, the output solids are the reactor ash (that which is removed during a test and that remaining in the reactor after a test) and the flyash in the combustion gases. It is desired to operate the PFB at the highest thermal efficiency and at the same time minimize the quantity of solid material in the combustion gases.

The chemical analyses of the two types of coal and the two types of sorbent used in this program are given in table 5. The analyses were provided by the suppliers and verified by spot sample laboratory analysis. The table values are averages with a ±5 percent variation. The chief difference between the Pittsburgh and Ohio coal, as far as this program was concerned, was the sulfur content and the heat of combustion. The sorbents differed in that the limestone was almost all calcium carbonate, while the dolomite was half calcium carbonate and half magnesium carbonate. Theoretically the calcium has a greater affinity for combining with the sulfur from the burning coal than does the magnesium. The combination of calcium and sulfur forms solid calcium sulfate. The calcium and magnesium are expressed in terms of their oxide form in table 5. This is the form that they assume in a high-temperature environment, such as a PFB combustion bed, with large flows of excess air passing by them.

Before a new test series was started each week the PFB reactor was filled to the desired depth with previously used bed material and topped off with new sorbent material. The quantities put in the reactor before each test series are listed in table 6. Also listed is the quantity of material removed from the reactor at the conclusion of a given test series. The input and output quantities do not agree because for some test series the input quantity settled after being deposited and it took further input during the testing period to bring the bed level up to the desired height. In other tests the combustion gas flow carried out large quantities of very fine bed particles, finer than the particles with which the bed was initially filled.

In order to determine the quantity of bed solid material entrained in the combustion gases as flyash, a portion (~1/4) of the gases was diverted periodically during each test through a microfine gas-filtering system. This system is shown in figure 7. The diverted gases passed through a flow-meter, a cyclone-type separator, a microporous element gas filter, and a commercial gas filter bag before venting to the atmosphere. The system was able to capture particles 0.2 micrometer and larger. The quantity of solids removed by this system is assumed to be representative of the rest of the combustion gases and is reported in table 7 as the grains of solid mass per standard cubic foot of gas.

The solids mass balance data for each test are reported in table 7. The input solids that should remain unreacted during testing are the ash in the coal, about 8 percent, and the oxide portion of the sorbent, about 57 percent in limestone. The solids being removed from the PFB system during testing are the bed surface removal unit discharge, the gas cyclone separator discharge solids, and the flyash that remains in the gases leaving the system. The bed surface discharge solids were collected in a weigh system and the net weight is listed as DCO23. The cyclone separator discharge solids were also collected and weighed; the value is DCO25. At various times

during a test series the accumulation of discharge solids was weighed and samples were taken for particle sizing and chemical analysis.

The solids from the bed surface and from the cyclone were sampled and sent to an analytical laboratory for composition determination. The results of this analysis are given in table 8. The solids were first separated chemically into the volatile and nonvolatile portions. The bed sample was mostly nonvolatile and the cyclone sample was about three quarters nonvolatile. The nonvolatile portion was analyzed for calcium, silica, sulfur, carbon, carbon oxides, sulfur oxides, and hydrogen concentrations.

Some of the solids from the bed surface and from the cyclone separator were analyzed for particle size distribution. Both a dry and a wet sieving technique were used to determine the size distribution of particles 25 micrometers and bigger. For particles smaller than 28 micrometers, the Andreason pipetting technique was used for determining particle size. The size is reported in table 9 as the mass percentage of the sample that is smaller than a stated size. Sizing is reported down to 5 micrometers. It was found to be important that the particle sizing analysis, and to a lesser extent the chemical analysis, of the solids be done as soon as possible after collecting the material. The particles are hygroscopic and they start caking and fusing together within a few days. There is also a change in particle coloring.

Table 10 shows a comparison of the chemical and sizing analysis for three different test bed samples. The finer material from the bed contained a greater percentage of sulfur than did the coarser portion. The coarser material was composed of a higher percentage of lime than were the smaller particles. Since the higher sulfur concentration was in the finer bed particles, it was important for the PFB operator to keep the combustion gas flow rate low enough to minimize the entrainment of these particles in the exhaust gases.

CONCLUDING REMARKS

Within the report is a vast array of test data and calculations pertaining to the operation of a PFB combustion system under various operating conditions. The Lewis PFB system is a research and development facility of 200-kilowatt (thermal) size that can be operated over widely varying conditions. The system is extensively equipped with sophisticated instrumentation and operating controls. A great deal of effort has been put into obtaining a high degree of accuracy in the results.

The data and results have been grouped in this report such that the reader interested in a particular test parameter or test condition can locate the pertinent information without looking through all the data. The reader should first check through the table of test parameters to determine if the ones he is interested in are listed. Or, if he is interested in a particular calculation, the reader can check in table 2 for how that calculation was made and what input data were used in the calculation. Next he should check table 3 for the particular type of PFB test he is concerned with. Knowing the parameters and the tests of interest, the reader can look in table 4 for the data for those tests and the desired parameters.

Together with the PFB facility report (ref. 3) this report shows what results can be obtained with given components and equipment. For example, changes in the gas cleanup system described by Rollbuhler and Kobak (ref. 8) can be related to the gas solids loading and flyash collected as reported in this publication. The description of the controls in both ref-

erences 3 and 7 and an analysis of the standard deviations of the control parameters listed in this report suggest areas of improvement in future PFB installations.

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TABLE 1. - PFB TEST DATA PARAMETERS

(a) Combustor input solids data

Recording data channel	Parameter	Data source	Valid test series
DC001 DC002 DC003 DC004	Coal consumed, 1b Coal hopper meter screw average value Sorbent consumed, 1b Sorbent hopper meter screw average value	ΔWeight ΔWeight	A11
DC005 DC006	Fuel consumed, lb Fuel hopper meter screw average value	CALC5	↓
DC014 DC022	Fuel injector line pressure drop, psid Fuel injector line wall temperature, *F	AS085 K007	J1-T7D A1A-TB2G
DC033	Fuel injector line pressure drop, psid	AS085	A1A-TB2G
DC092 DC093	Present fuel flow rate, pph (Modicon) Present fuel flow time, sec (Modicon)		E1-T7D
DC094	Previous fuel flow rate, pph (Modicon)		Ţ
DC095 DC100	Accumulated fuel flow, lb (Modicon) Reactor fuel flow indication, mV		¥ T3A-T7D
DC174 DC175	Present fuel flow rate, pph (Modicon)		A1A-TB2G
DC176	Present fuel flow time, sec (Modicon) Previous fuel flow rate, ppm (Modicon)		
DC177 DC298	Accumulated fuel flow, lb (Modicon) Present fuel flow rate, ppm (Escort)		♥ T3A-T7D
CALCO6	Sorbent-coal ratio	DC004 / DC002	All
CALCO7 CALCO8	Coal flow rate, pph Sorbent flow rate, pph	CALC5,6 CALC5,7	All All
CALCO5	Fuel flow rate, pph (AW least-squares fit)	DC174	A1A-TB2G
CALCO5 CALCO5	Fuel flow rate, pph (ΔW least-squares fit) Fuel flow rate, pph (ΔW least-squares fit)	DC092 DC298	E1-G19 H1-T7D2
CALC13 DCO22	Input calcium-sulfur ratio Fuel line pressure drop, psid	CALC8,7	A11
DCOZZ	(b) Combustor input air system dat.	AS085 a	E1-T7D
Recording	Parameter	Data source	Valid
data channel			test series
DC008	Combustor air venturi differential pres- sure, psid	AS046	All I
DC 009 DC 010	Combustor air line pressure, psia Combustor air inlet temperature, °F	AS025	
DC011	Fuel air injector venturi differential pressure, psid	K001 AS010	
DC012 DC013	Fuel air injector line pressure, psia Fuel air injector gas temperature, °F	AS011 T036	
DC015		AS042	
DC 016 DC 050	Burner air line pressure, psia Reactor air inlet temperature, °F	AS018 K004	
DC054	Reactor grid air differential pres- sure, psid	AS029	
DC 05 5 DC 09 9	Reactor internal gas pressure, psia Air heater vent air temperature, °F	TP064	
DC131	Air heater reactor air temperature, °F	K043 K025	
DC148 DC149	Air heater input air pressure, psia Air heater venturi differential pres- sure, psia	AS035 AS019	
CALCO4A	Combustor airflow rate, pph	DC8,9,10	
CALCO4B CALCO4C	Burner airflow rate, pph Fuel air injector flow rate, pph	DC13,15,16 DC11,12,13	
CALCO4	Total combustion airflow rate, pph	CALC4A,B,C	
CALCO9 CALC16	Reactor coal-air ratio Reactor grid airflow coefficient	CALCO4,07 DC50,54,55	↓

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TABLE 1. - Continued.

(c) Combustor temperature and pressure data

Recording data channel	Parameter	Data source	Valid test series
DC030 DC031	Bed temperature, 5 inches up left side, "F Bed temperature, 5 inches up right side, "F	R097 R098	A11 A11
DC032	Red temperature 16 inches up "F	R114	All
DC032	Bed temperature, 15 inches up, F Bed temperature, 29 inches up, F	R100	E1-T7D
DC034		R091	A11
DC035	Bed temperature, 15 inches up, F Bed temperature, 29 inches up, F Bed temperature, 42 inches up, F Bed temperature, 55 inches up, F	R092	AII
DC036	Bed temperature, 67 inches up, °F	R093	
DC037	Bed temperature, 42 inches up, °F Bed temperature, 55 inches up, °F Bed temperature, 67 inches up, °F Bed temperature, 79 inches up, °F	R094	
DC038	Bed temperature, 96 inches up, °F	R095	
DC039	Internal temperature below gas exit, F	R096	₩
DC028	Reactor grid metal temperature. F	R112	A1A-TB2G
DC029	Reactor grid cap metal temperature, °F	R113	A1A-TB2G
DC051	Reactor grid to port 1 differential pres- sure, psid		E1-T3E
DC052	Reactor port 1 to port 2 differential pressure, psid		E1-T3E
DC056	Reactor overall bed differential pres-	TP042	A11
	sure, psid	***	
DC167	Bed sample rod 1 temperature, °F	K011	A1A-TB2G
DC168	Bed sample rod 2 temperature, °F	K012	1
DC169	Bed sample rod 1 temperature, °F Bed sample rod 2 temperature, °F Bed sample rod 3 temperature, °F Bed sample rod 4 temperature, °F	K013	i
DC170		K014	
DC171	Bed sample rod 4 temperature, "F Bed sample rod 5 temperature, "F Bed sample rod 6 temperature, "F	K015	j
DC172		K016	
DC173	Bed sample rod / temperature, F	K017	▼
DC178	Reactor grid to port 1 differential pres- sure, psid		A1A-TB2G
DC179	Reactor port 1 to port 2 differential pressure, psid		
DC180	Reactor port 2 to port 3 differential pressure, psid		
DC181	Reactor port 3 to port 4 differential pressure, psid		ļ

TABLE 1. - Continued.

(d) Combustor wall temperature data

Recording data channel	Parameter	Data source	Valid test series
DC026 DC027 DC028 DC029	Reactor port 6 wall surface temperature, "F Reactor port 4 wall surface temperature, "F Reactor port 1 wall surface temperature, "F Reactor combuster wall surface temperature, "F	T042 T039 T040 R104	E1-T7D
DC 040	Reactor combustor bottom wall shallow temperature, °F	R101	All
DC 041	Reactor combustor bottom wall deep temperature, "F	R102	A11
DC042	Reactor combustor top wall shallow temperature, °F	R103	A11
DC 043	Reactor combustor top wall deep temperature, °F	R104	A1A-TB2G
DC 04 4	Reactor port 4 wall shallow tempera- ture, F	R105	All
DC 045	Reactor port 4 wall deep temperature, °F	R106	
DC046	Reactor top cap wall deep temperature, F	R107	
DC047	Reactor top cap wall surface tempera- ture, °F	K026	. ↓
DC 048	Reactor top cap wall surface temper- ature, *F	K027	A1A-TB2G
DC112	Reactor port 6 wall insulation tempera- ture, F	K060	T3A-T7D
DC156	Reactor gas exit wall temperature, °F	K068	A1A-E15
DC171	Reactor exit pipe insert wall tempera- ture, *F	K058	E1-T7D
DC043	Reactor port 6 wall deep temperature, °F	R112	•
DC048	Reactor top cap wall surface temper- ature, *F	R113	1
DC156	Reactor gas exit wall temperature, °F	K042	F1-T7D

TABLE 1. - Continued.

(e) PFB system solids discharge data

Recording data channel	Parameter	Data source	Valid test series
DC049	Reactor-solids discharge pipe wall temperature, °F	К005	A11 .
DC118	Reactor-solids discharge coolant tem- perature. °F	T030	A11
DC119	Reactor-solids removal unit (probe) temperature, °F	T031	A1A-TB2G
DC023 DC136 DC137	Reactor-solids discharge, lb Gas-solids sampler gas pressure, psia Gas-solids sampler venturi differential pressure, psid	ΔWeight TP055 TP058	All
DC138 DC025 DC139	Gas-solids sampler gas temperature, °F Gas-solids separator solids discharge, lb Gas-solids separator hopper wall tempera- ture. °F	KO49 AWeight KO51	
DC140	Gas—solids separator hopper coolant tem— perature, °F	T029	A1A-TB2G
DC141	Gas-solids separator collector tempera- ature, °F	K052	A1A-E15
DC150	Gas-solids separator discharge differential pressure, psid		I1-T7D
DC165	Reactor-solids separator pipe wall tem- perature, °F	K054	A11
DC166	Reactor-solids separator gas tempera- ture, *F	K057	All
DC173	Gas-solids separator gas wall tempera- ture. F	K055	E1-T7D
DC174	Gas-solids separator hopper wall tempera- ture, °F	K056	
DC175	Gas-solids separator exit gas tempera- ture. °F	K059	
DC176 DC180	Gas-solids filter unit wall temperature, °F Gas-solids separator differential pres- sure, psid	K066 TP163	↓

TABLE 1. - Continued.

(f) PFB coolant system data

Recording data channel	Parameter	Data source.	Valid test series
DC051 DC052	Reactor coolant water flow rate, gal/min Reactor coolant water flow rate, gal/min	F10 F11	T3F-T7D T3F-T7D
DC077	Reactor coolant water inlet temperature, 'F	T038	A11.
DC078	Reactor coolant water inlet pressure, psia	WS008	1
DC079	Reactor coolant water flow rate, gal/min	F2/WS013	
DC080	Reactor coolant water exit pressure, psia	WS038	
DC081 DC082	Reactor coolant 1 outlet temperature, "F Reactor coolant 2 outlet temperature, "F	T001 T002	
DC083	Peactor coolant 3 outlet temperature °F	T002	
DC084	Reactor coolant 4 outlet temperature, °F	T003	
DC085	Reactor coolant 5 outlet temperature, °F	T005	- 1
DC086	Reactor coolant 6 outlet temperature, °F	T006	ļ
DC087	Reactor coolant 7 outlet temperature, °F	T007	
DC088	Reactor coolant 8 outlet temperature, F	T008	Ψ
DC089	Reactor coolant 9 outlet temperature, F Reactor coolant 10 outlet temperature, F Reactor coolant 11 outlet temperature, F	T009	A1A-TB2G
DC090	Reactor coolant 10 outlet temperature, F Reactor coolant 11 outlet temperature, F	T010	
DC091 DC092	Peactor coolant 12 outlet temperature, F	T011 T012	
DC 093	Reactor coolant 12 outlet temperature, F Reactor coolant 13 outlet temperature, F	T013	İ
DC094	Reactor coolant 14 outlet temperature. °F	T014	
DC 095	Reactor coolant 13 outlet temperature, *F Reactor coolant 14 outlet temperature, *F Reactor coolant 15 outlet temperature, *F Reactor coolant 16 outlet temperature, *F	T015	
DC096	Reactor coolant 16 outlet temperature, *F	T016	*
DC 096	Reactor coolant water flow rate, gal/min		E1-T7D
DC097	Reactor coolant combustor water flow rate,	F3/WS009	All
DC098	gal/min Reactor coolant_combustor water outlet	T028	. [
00000	temperature. °F	1020	
DC101	Reactor coolant water flow rate, gal/min	F1/WS017	
DC102	Reactor coolant water exit pressure, psia	WS039	
DC103	Reactor coolant 17 outlet temperature, F	T017	
DC104	Reactor coolant 18 outlet temperature, F	T018	
DC105		T019	
DC106	Reactor coolant 20 outlet temperature, F	T020	
DC107 DC108	Reactor coolant 21 outlet temperature, F Reactor coolant 22 outlet temperature, F	T021 T022	
DC109	Reactor coolant 23 outlet temperature, F	T023	
DC110	Reactor coolant 24 outlet temperature, F	T024	}
DC111	Reactor coolant 25 outlet temperature, °F	T025	*
DC112	Reactor coolant 26 outlet temperature, "F	T026	AlA-TB2G
DC113	Reactor coolant transition section flow	F4/WS012	All
DC114	rate, gal/min Reactor coolant transition section exit	T027	A11
00115	temperature, F	7000	433
DC115	Reactor top wall coolant exit tempera- ture. °F	T032	All
DC116	Reactor mid-wall coolant exit tempera-	T033	A11
DC117	ture, F. Reactor bottom wall coolant exit tempera-	T034	
DCIII	ture, °F	1034	
DC120	Reactor outside wall coolant exit tempera-	T075	
DC121	ture, F Reactor outside wall coolant flow rate.	F5/WS016	1
DOILI	gal/min	13/#3010	₩
DC140	Reactor transition coolant exit presssure,	WP 004	E1-T7D
DC141	Reactor coolant water flow rate, gal/min	F9	F1-T7D
DC145	PFB system coolant discharge pressure, psia	WP004	A1A-TB2G
CALC26	Heat exchanger heat transfer rate, Btu/hr		A11
CALC27	Heat extractors heat transfer rate, Btu/hr		1
CALC28 CALC30	Reactor wall heat transfer rate, Btu/hr Heat transfer coefficient, Btu/hr ft² °F		
CALC58	PFB system total heat transfer rate. Btu/hr		¥
	Ly Ly Lam book in the brains it is the boutin	-	•

TABLE 1. - Continued.

(g) Combustion gas system data

Recording data channel	Parameter	Data source	Valid test series
DC122 DC123 DC124 DC125 DC126 DC127 DC128 DC129 DC130 DC132	Reactor gas cooler 4 coolant temperature, °F Reactor gas cooler 3 coolant temperature, °F Reactor gas cooler 2 coolant temperature, °F Reactor gas cooler 1 coolant temperature, °F Reactor gas cooler 4 gas exit temperature, °F Reactor gas cooler 2 gas exit temperature, °F Reactor gas cooler 2 gas exit temperature, °F Reactor gas cooler 1 gas exit temperature, °F Reactor gas cooler 2 gas exit temperature, °F Exhaust gas cooler exit water temperature, °F Gas—air heat exchanger 4 gas wall temperature, °F Gas—air heat exchanger 3 gas wall temperature, °F	T050 T051 T059 T053 K028 K029 K030 K031 T057 K032	All
DC134 DC135	Gas-air heat exchanger 2 gas wall tempera- ture, °F Gas-air heat exchanger 1 gas wall tempera-	K034 K035	
	ture, F	KU35	
DC142 DC143 DC144 DC145	Gas system coolant water flow rate, gal/min Gas system coolant exit temperature, °F Exhaust gas temperature, °F Exhaust gas exit pressure, psia	F6/WS036 T074 K036	53.0364
DC145	Exhaust gas exit pressure, psia Exhaust gas flow rate, mV		E1-CAS4 E1-CAS4
DC151	Exhaust gas flow rate, mV		T3A-T7D
DC076	Exhaust gas cooler exit gas temperature, °F	K039	A11
DC152	Exhaust gas exit pressure, psia		T3A-T7D
CALC29 CALC37	Gas system coolant heat transfer, Btu/hr		A11
CALC37	Gas flow rate, 1b/hr		l
CALC39	Combustion gas heat transfer, Btu/hr Combustion gas velocity at reactor grid, ft/sec		
CALC40	Combustion gas velocity at 26-in. bed depth, ft/sec		
CALC41	Combustion gas velocity at 44-in. bed depth, ft/sec		
CALC42	Combustion gas velocity at 56-in. bed depth, ft/sec		
CALC43	Combustion gas velocity at 68-in. bed depth, ft/sec		
CALC44	Combustion gas velocity at 80-in. bed depth, ft/sec		
CALC45	Combustion gas velocity at 97-in. bed depth, ft/sec		ţ

TABLE 1. - Continued.

(h) Combustion gas analyzing system data

Recording data channel	Parameter	Data source	Valid test series
DC027	Reactor sample port gas temperature, "F	K050	A1A-TB2G
DC026	Reactor sample port gas pressure, psia	TP016	A1A-TB2G
DC063	Gas analysis NO _x value, ppm		A1A-TB2G
DC064	Gas analysis NO _x value, ppm		E1-T7D
DC065	Gas analysis CO value, ppm		E1-T7D
DC066	Gas analysis CO value, ppm		A1A-TB2G
DC067	Gas analysis hydrocarbon value, ppm		A1A-TB2G
DC068			E1-T7D
DC069	Gas analysis CO2 value, ppm		A1A-TB2G
DC070	Gas analysis CO ₂ value, ppm		E1-T7D
DC071	Gas analysis CO ₂ value, ppm Gas analysis SO _x value, ppm		A1A-TB2G
DC072	Gas analysis SO _X value, ppm		E1-T7D
DC073	Gas analysis O ₂ concentration, ppm		All
DC 074	Gas analysis SO _x permissive signal, mV		ı
DC075	Gas analysis sample gas temperature, F	K037	1
DC057	Gas analysis sample gas pressure, psia	TP109	*
DC089	Sample line steam heating differential temperature, "F	K040/041	E1-T7D
	temperature, °F		
DC090	Sample line steam-heated wall temperature, F	K036	E1-T7D
DC091	Sample line gas wall temperature, 'F	K045	E1-T7D
DC146	Sample line steam input wall temperature, F	K038	A1A-TB2G
DC150	Sample line steam heating differential	K040/041	A1A-TB2G
	temperature, °F		
DC157	Reactor sample port gas temperature, "F	K050	J1-T7D
DC159	Sample line gas wall temperature, "F	K045	A1A-TB2G
CALC34	Combustor gas valid SO _X concentration, ppm		All
CALC46	Exhaust gas NO, concentration, 1b/100 Btu		-
CALC47	Exhaust gas SO _x concentration, 1b/10 ^b Btu		- 1
CALC49	Exhaust sulfur percentage of input coal		1
	sulfur		▼

TABLE 1. - Concluded.

(i) PFB test unit data

Recording data channel	Parameter	Data source	Valid test series
DC051 DC052 DC150 DC151 DC152 DC153 DC154 DC155 DC157 DC157 DC158 DC145 DC146	Test sample 1 temperature, °F Test sample 2 temperature, °F Test section gas pressure, psia Test sample rotation rate, rpm Test section coolant exit 1 temperature, °F Test section coolant exit 2 temperature, °F Test section coolant exit 3 temperature, °F Test section gas exit temperature, °F Test section gas inlet temperature, °F Test section gas inlet temperature, °F Test turbine stator gas pressure, psia Test turbine gas exit pressure, psia	R121 R122 	A1A-M12 A1A-M12 A11 A11 A1A-CAS4 E1-I13 A1A-TB2G L1-T7D
DC119	Test turbine gas inlet wall temperature, F	K027	T3F-T70
DC155 DC158 DC159 DC167 DC168 DC169	Test turbine gas exit temperature, F Test section 1 sample temperature, F Test section 2 sample temperature, F Test turbine inlet gas temperature, F Test turbine inlet gas temperature, F Test turbine body wall differential	K071 R121 R122 K067 K068 K069-070	L1-T7D E1-T7D
	temperature, °F·		
DC170 DC172 DC177	Test turbine blade temperature, "F Test turbine coolant exit temperature, "F Test turbine gas inlet pressure, psia	T061 TP164	
DC178	Test turbine internal gas pressure, psia		
DC179 DC181	Test turbine gas exit pressure, psia Test turbine case internal pressure, psia	AS183	- 1
DC182	Test turbine lubricating oil flow rate, qal/min	LP112	
DC183	Test turbine bearing 1 temperature, F	K021	1
DC184	Test turbine bearing 2 temperature, F	K022	ı
DC185	Test turbine thrust bearing 1 temperature, F	K023	1
DC186 DC187	Test turbine thrust bearing 2 temperature, F Test turbine journal bearing 1 tempera- ture. F	K024 K019	
DC188	Test turbine journal bearing 2 tempera- ture, "F	K020	
DC189	Test turbine lubrication oil exit tempera- ture, "F	T086	
DC190	Test turbine lubrication oil inlet tempera- ture, °F	T078	
DC191	Test turbine brake air temperature, F	T087	
DC192	Test turbine brake air pressure, psia	AS152	
DC193	Test turbine brake air differential pressure, psid	AS153	
DC194	Test turbine housing gas differential pressure, psid	AS162	↓
DC195	Test turbine shaft rotation rate 1, rpm	AS174	E1-T7D
DC196	Test turbine shaft rotation rate 2, rpm	AS172	1
DC197	Test turbine rotation acceleration 1	AS164	
DC198 DC199	Test turbine rotation acceleration 2 Test turbine window purge gas temperature, *F	AS166 T088	ţ

```
CALCO6 = Fuel sorbent-coal ratio (LCRAT)
  LCRAT = Ratio of sorbent hopper outflow to coal hopper outflow
     Sorbent hopper outflow = Function of sorbent meter screw rotation rate
                                     (DC004)
     Coal hopper outflow = Function of coal meter screw rotation rate
                                 (DC002)
CALCOS = Reactor fuel flow rate, lb/hr (ESHFRN)
  ESHFRN = DC174, Modicon-calculated fuel flow rate, 1b/hr, for tests A1A-TB2G.
  ESHFRN = DCO92, Modicon-calculated fuel flow rate, lb/hr, for tests E1-G19. ESHFRN = DC298, Escort-calculated fuel flow rate, lb/hr, for tests Hi-T7D2.
  ESHFRN is determined from a least-squares fit equation:
    ESHFRN = [(\Sigma W_i)(\Sigma T_i) - N\Sigma(W_i \times T_i)]/[(\Sigma T_i)^2 - N\Sigma(T_i)^2]
where
W_1 = DC005, fuel used in test, 1b, since startup
T_i = Time, sec, since startup
   = Data points recorded since startup
        For the Modicon, data points taken approximately once a minute.
For the Escort, data points taken approximately 15 times per minute.
CALCO7 = Reactor input coal flow rate, 1b/hr (CFRAT)
  CFRAT = (ESHFRN)/(1.00 + LCRAT)
     ESHFRN from CALC5
     LCRAT from CALC6
CALCOB = Reactor input sorbent flow rate, lb/hr (LFR)
  LFR = ESHFRN - CFRAT
     ESHFRN from CALCOS
     CFRAT from CALCO7
CALCO4 = Reactor input total airflow rate, lb/hr (TAF)
  TAF = WAIRR + WAIR + FAF
     WAIRR = Reactor main combustion airflow rate, lb/hr
            = Function of a venturi airflow computer subroutine that uses
                 DC008, combustion air venturi differential pressure
                DC009, combustion air line pressure
DC010, combustion air inlet temperature
Venturi throat diameter and inlet diameter
     WAIR = Reactor burner system airflow rate, lb/hr
           = Function of a venturi computer subroutine that uses
               DC015, burner air venturi high differential pressure
               DC016, burner air line pressure DC013, air inlet temperature, *F
               Venturi throat and inlet diameters
     FAF = Fuel system injection airflow rate, lb/hr
          = Function of a venturi computer subroutine that uses
              DC011, fuel injection air venturi differential pressure
              DC012, fuel injection air line pressure
              DC013, air inlet temperature,
```

CALCO9 = Reactor input coal-air ratio (CARAT)

Venturi throat and inlet diameters

CARAT = CFRAT/TAF CFRAT from CALCO7 TAF from CALCO4

```
TABLE 2. - Continued. (b)
CALC13 = PFB input calcium-sulfur ratio (RICSR)
  RICSR = Ratio of calcium input to sulfur input from coal
         = (LFR)(percent CA)(MWS)/(CFRAT)(percent S)(MWCA)
  LFR from CALCO8
  Percent CA = Mole percent calcium in sorbent:
     If sorbent is limestone, percent CA = 38
     If sorbent is dolomite, percent CA = 20
  MWS = Molecular weight of sulfur = 32
  CFRAT from CALCO7
  Percent S = Mole percent sulfur in coal:
     If coal is Pittsburgh No. 8, percent S = 1.95
  If coal is Ohio seam, percent S = 2.8 MWCA = Molecular weight of calcium = 40
CALC46 = PFB exhaust gas NO_x concentration, 1b NO_x/10^6 Btu energy (NOXVG)
  NOXVG = (GANO)(WETAF)(MWNO2)/[(MWEG)(\Delta HCOAL)(CFRAT)]
    GANO = Exhaust gas NO<sub>x</sub> concentration, ppm, DCO63 (Tests A1A-TB2G) DCO64
              (Tests E1-T7D2)
    WETAF = TAF, CALCO4
    MWN02 = N0_2 molecular weight = 46.007
    MWEG = Exhaust gas molecular weight ~ N<sub>2</sub> gas molecular weight = 28.0
     ΔHCOAL = Heat content of coal, Btu/lb
    CFRAT from CALCO7
CALC47 = PFB exhaust gas SO_x concentration. 1b SO_x/10^6 Btu energy (SO2VG)
  SO2VG = (SO2)(WETAF)(MWSO2)/[(MWEG)(\Delta HCOAL)(CFRAT)]
     SO2 = Exhaust gas SO_X concentration valid value, ppm, CALC34
    WETAF = TAF
    MWSO2 = SO_2 molecular weight = 64.06
    MWEG = Exhaust gas molecular weight
     AHCOAL = Coal heat content, Btu/1b
    CFRAT from CALCO7
CALCO49 = Exhaust gas sulfur as a percentage of input sulfur (PCTSV)
  PCTSV = (SO2VG)(\Delta HCOAL)/[(10^4)(FRAC.S in coal)]
     SO2VG = CALC47
     ΔHCOAL = Coal heat content, Btu/lb
    FRAC.S = 0.0195 if Pittsburgh coal is used
            = 0.0280 if Ohio coal is used
```

CALC16 = Reactor grid airflow coefficient (GPFC)
GPFC = (WAIRR)/[(K4)(Y4)((DAIR)(RGDP))]

WAIRR = Reactor main combustion airflow rate, 1b/hr (See CALCO4)

Y4 = 1.40 + [(RGDP)/(RDGP + RGDP)]

RGDP = DCO54, reactor grid air differential pressure, psid

RDGP = DCO55, reactor combustion gas pressure, psia
DAIR = Air density, lb/ft³ = Function of RDGP, RGDP, and RAIT
RAIT = DCO50 Grid air temperature, °F

= 735.1 for tests E1-CAS4 = 1003.7 for tests L1-T7D2

K4 = Flow area coefficient = 979.9 for tests A1A-TB2G

```
CALC72 = Reactor combustion efficiency (CE)
  CE = 1.0000 - BETA1 - BETA2
     BDTA1 = Energy loss in gas exhaust products
    DETA2 = Energy loss in reactor solid discharge

BETA1 = (WEG/MWEG)[(XCO)(MWCO)(QCO) + (XHC)(MWHC)(QHC)]/[(WC)(FC)(QCL)]

BETA2 = [(WD)(QDL) + (WASG)(WE/WG)(QASL)]/[(WC)(FC)(QCL)]

WEG = Exhaust gas flow rate corrected for moisture = (WE) - (WC)(FC)(YH)

x (MWH2O/MWH2)(1 - ZA) - (WC)(1 - FC)
    Calculation subroutines:
     ZH = Weight friction of H_2 in discharge
= [(WD)(YYH2) + (WASG)(WE/WG)(YAH2)]/[(WC)(FC)(YH)]
    MWEG = Molecular weight of exhaust gases
= (XN2)(MWN2) + (XCO)(MWCO) + (XCO2)(MWCO2) + (XHC)(MWHC)
+ (XO2)(MWO2) + (XNOX)(MWNO2) + (XSO2)(MWSO2)
     XN2 = Mole fraction of nitrogen gas
               = (1.000) - (XCO) - (XHC) - (XCO2) - (XNOX) - (XSO2) - (XO2)
     QCL = Coal \Delta H = (QCB) - (1040)(YH)(MWH20/MWH2)
     XCO = Mole fraction of CO = YCOx10^{-6}
     YCO = CO in gases, ppm
     XCO2 = Mole fraction of <math>CO_2 = YCO2 \times 10^{-6}
     YCO2 = CO_2 in gases, ppm
     XHC = Mole fraction of hydrocarbons = YHCx10^{-6}
     YHC = HC in gases, ppm
     XNOX = Mole fraction of nitrogen oxides = YNOXx10^{-6}
     YNOX = NO_x in gases, ppm
     X02 = Mole fraction of 0<sub>2</sub> = Y02x10<sup>-6</sup>
     Y02 = 0_2 in gases, ppm
     XSO2 = Mole fraction of SO<sub>2</sub> = YSO2x10<sup>-6</sup>
     YSO2 = SO_2 in gases, ppm
     MWCO = Molecular weight of CO = 28.02
     MWN2 = Molecular weight of N_2 = 28.16
     MWHC = Molecular weight of HC = 16.05
     MW02 = Molecular weight of 0_2 = 32.00
     MWH20 = Molecular weight of water = 18.02
```

MWS02 = Molecular weight of $S0_2 = 64.07$

MWH2 = Molecular weight of $H_2 = 2.02$

MWN02 = Molecular weight of $N0_2 = 46.00$

MWCO2 = Molecular weight of $CO_2 = 44.02$

QCO = CO ΔH = 4346 Btu/lb

QHC = Hydrocarbons ΔH = 21 515 Btu/1b

QDL = Solids discharge heat value, Btu/lb

QASL = Gas flyash heat value, Btu/lb

WC = Coal flow rate, 1b/hr, CALCO7

WD = Reactor solids discharge rate, 1b/hr

WG = Exhaust gas flow rate through sampler, 1b/hr

WASG = Exhaust gas flyash flow rate into sampler, lb/hr

WA = Reactor input combustion airflow rate, lb/hr from CALCO4

WL = Reactor sorbent flow, 1b/hr from CALCO8

FC = Ratio of dry to wet coal

YASH = Weight fraction of ash in coal

YH = Weight fraction of hydrogen in coal

YYCO2 = Weight fraction of CO_2 to discharge solids

YYS = Weight fraction of S in discharge solids

YYH2 = Weight fraction of H_2 in discharge solids

YYC = Weight fraction C in discharge solids

YACO2 = Weight fraction of CO2 in flyash

YAS = Weight fraction of S in flyash

YAH2 = Weight fraction of H_2 in flyash

YAC = Weight fraction of C in flyash

YXCO2 = Weight fraction of CO2 products per pound of limestone

CALC30 = Heat transfer coefficient, Btu/hr ft² °F (UE)

UE = (HTR/area)/[(0.5)(GTB + GTA - WTO - WTI)]

HTR = Heat transfer rate, Btu/hr AREA = Heat transfer area, ft^2

GTB = Combustion gas temperature before the heat transfer unit, °F GTA = Combustion gas temperature after the heat transfer unit, °F WTO = Heat transfer unit coolant outlet temperature, °F

WTO = Heat transfer unit coolant outlet temperature, $^{\circ}F$ W $^{\dagger}I$ = Heat transfer unit coolant inlet temperature, $^{\circ}F$ (DC077)

CALC37 = Combustion gas flow rate, 1b/hr (WEC)

A venturi gas flowmeter was installed in the PFB exit gas line for tests ${\tt E1}$ to CAS4. The flowmeter signal was recorded on DC146. The flowmeter had problems due to flyash fouling, and the results were erratic.

```
WEC = (1890)(Y7)(K7)(\sqrt{(RH07)(EGF)})
     Y7 = 1.000 - (0.293)(2.32)(EGF/EGVP)
               EGF = Vent gas venturi pressure differential, psid (DC146)
               EGVP = Vent gas pressure, psia (DC145)
     K7 = Nominal discharge coefficient
RHO7 = Vent gas density, lb/ft<sup>3</sup>
            \approx Nitrogen density = (0.072)(EGVP/14.7)(529.7)/(EGVT) + 460)
     EGVT = Vent gas temperature. F
   If WEC was calculated to be less than TAF (CALCO4), TAF was assumed to be
   more accurate than WEC in being the combustion gas flow rate.
CALC34 = Combustion gas valid SO_x concentration, ppm (SO2)
   SO2 = GASD, DCO71 (tests A1A to TB2G) or DC72 (tests E1 to T7D2) only if
             GAO,DCO73, is equal to or greater than 50 000 ppm and GAIP,DCO57, is greater than 20 psia. If these conditions are not met, SO_2=0.
CALC39 = Reactor grid level gas velocity, ft/sec (VELG)
   VELG = (TAFS)/[AREA1 x RHOAIR]
     TAFS = Combustor airflow rate, 1b/sec = TAF/3600
     TAF = Combustion airflow rate, 1b/hr (CALCO4)
     AREAl = Reactor cross-sectional area at grid plate = 0.43 \rm ft^2 RHOAIR = Air density, \rm lb/ft^3 = Function of RDGP and TBB
     RDGP = Combustion pressure, psia (DC055)
TBB = Bed bottom temperature, *F (either DC030 or DC031;
    whichever is greatest)
CALC40 = Reactor port 1 level gas velocity, ft/sec (VEL1)
   VEL1 = (WETAF)/[(AREA1)(RHON1)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALC04), whichever is greater
     AREA1 = Bed cross-sectional area at port 1 level = 0.43 ft<sup>2</sup>
RHON1 = Gas density, 1b/ft<sup>3</sup>, at port 1 level
N2 density = (0.072)(RDGP/14.7)(529.7/RBT32 + 460° F)
     RDGP = Combustion pressure, psia, DC055
     RBT32 = Combustion gas temperature near port 1, °F (DC032)
CALC41 = Reactor port 2 level gas velocity, ft/sec (VEL2)
   VEL2 = (WETAF)/[(AREA2)(RHON2)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALCO4), whichever is greater
     AREA2 = Bed cross-sectional area at port 2 level = 0.92 \text{ ft}^2
RHON2 = Gas density, 1b/\text{ft}^3, at port 2 level N2 density = (0.072)(\text{RDGP}/14.7)(529.7/\text{RBT34} + 460)
     RDGP = Combustion pressure, psia (DC055)
     RBT34 = Combustion gas temperature near port 2 level, 'F (DC034)
CALC42 = Reactor port 3 level gas velocity, ft/sec (VEL3)
   VEL3 = (WETAF)/[(AREA3)(RHON3)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALC04), whichever is greater
     AREA3 = Bed cross-sectional area at port 3 level = 1.17 \text{ ft}^2
RHON3 = Gas density, 1b/\text{ft}^3, at port 3 level N2 density = (0.072)(\text{RDGP}/14.7)(529.7/\text{RBT}35 + 460)
     RDGP = Combustion gas pressure, psia (DC055)
     RBT35 = Combustion gas temperature near port 3 level, *F (DC035)
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CALC43 = Reactor port 4 level gas velocity, ft/sec (VEL4)
  VEL4 = (WETAF)/[(AREA4)(RHON4)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALC04), whichever is greater
     AREA4 = Bed cross-sectional area at port 4 level = 1.40 \text{ ft}^2
RHON4 = Gas density, 1b/\text{ft}^3, at port 4 level
N2 density = (0.072)(\text{RDGP}/14.7)(529.7/\text{RBT36} + 460)
     RDGP = Combustion gas pressure, psia (DC055)
     RBT36 = Combustion gas temperature near port 4 level, °F (DC036)
CALC44 = Reactor port 5 level gas velocity, ft/sec (VEL5)
  VEL5 = (WETAF)/[(AREA5)(RHON5)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALC04), whichever is greater
     AREA5 = Bed cross-sectional area at port 5 level = 1.77 \text{ ft}^2
RHON5 = Gas density, 1b/\text{ft}^3, at port 5 level N2 density = (0.072)(\text{RDGP}/14.7)(529.7/\text{RBT37} + 460)
     N2 density = (U.U/2)(NDDG),..., RDGP = Combustion gas pressure, psia (DC055)
CALC45 = Reactor port 6 level gas velocity, ft/sec (VEL6)
  VEL6 = (WETAF)/[(AREA6)(RHON6)(3600 sec/hr)]
     WETAF = WE(CALC37) or TAF(CALC04), whichever is greater
     AREA6 = Bed cross-sectional area at port 6 level = 2.18 ft<sup>2</sup>
RHON6 = Gas density, lb/ft<sup>3</sup>, at port 6 level
               N2 density = (0.072)(RDGP/14.7)(529.7/RBT38 + 460)
     RDGP = Combustion gas pressure, psia (0C055)
RBT38 = Gas temperature near port 6 level, F (DC038)
CALC26 = Heat transfer from reactor heat exchangers, Btu/hr (HETHT)
  HETHT = (HETCF)(CPW)(HEOT - CWIT)(500 lb min/gal hr)
     HETCF = Heat exchanger total coolant flow rate, gal/min (DCO97)
     CPW = Heat capacity or coordinate HEOT = Coolant outflow temperature, °F (DC098)
     CPW = Heat capacity of coolant = Function of HEOT
                                                    °F (DC098)
CALC27 = Heat transfer from reactor heat extractors, Btu/hr (HXTHT)
  HXTHT + (HXTCF)(CPW)(HXOT - CWIT)(500.4 lb min/gal hr)
     HXTCF = Heat extractor total coolant flow rate, gal/min (DC113) CPW = Heat capacity of coolant = Function of HXOT
     HXOT = Coolant outflow temperature, °F (DC114)
CALC28 = Reactor wall coolant heat transfer, Btu/hr (RWHT)
  RWHT = (RWCF)(CPW)(RWCT - CWIT)(500.4 lb min/gal hr)
     RWCF = Wall coolant flow rate, gal/min (DC121)
     CPW = Coolant heat capacity = Function of RWCT
     RWCT = Coolant outflow temperature, °F (DC120)
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CALC29 = Auxiliary systems coolant heat transfer, Btu/hr (ASHT)
   ASHT = (ASCF)(CPW)(ASCT - CWIT)(500.4 lb min/gal hr)
      ASCF = Auxiliary system coolant flow rate, gal/min (DC142)
      CPW = Coolant heat capacity = Function of ASCT ASCT = Coolant outflow temperature, *F (DC077)
CALC38 = Vent gas heat transfer, Btu/hr (WEHT)
   WEHT = (WEC)(CPN)(EGVT - RAFT)
      WEC = Vent gas flow rate, 1b/hr (CALC37)
      CPN = Vent gas heat capacity Nitrogen gas heat capacity = Function of EGVT and EGVP
      EGVT = Vent gas temperature. °F (DC144)
      EGVP = Vent gas pressure, psia, DC145 (E1 to CA4), DC152 (T3A to T7D2)
RAFT = Input air temperature, F (DC010)
CALC58 = PFB total heat transfer, Btu/hr (TARH)
   TARH = HETHT + HXTHT + ASHT + WEHT + RWHT + CAHT
      HETHT = CALC26
     HXTHT = CALC27
HETHT + HXTHT = CALC26X
      ASHT = CALC29
     WEHT = CALC38
     RWHT = CALC28
     CAHT = Preheater air heat adsorption, Btu/hr
     CAHT = Prefeteter all fleet dosorption, Bruyin

CAHT = (CAF)(CP)(CATOUT - AIT)

CAF = Air flow rate, lb/hr

CP = Air heat capacity, Btu/lb/°F, a function of AIT and CAIP

CATOUT = Vent air temperature, °F (DC099) or reactor input air

temperature, °F (DC131), whichever is greater.

CAE

Expection of a venturi subroutine that includes
     CAF = Function of a venturi subroutine that includes
                  AlT, injection air temperature, DCO13
CAIP, air heater line pressure, psia (DC148)
CADP, air heater venturi differential pressure, psid (DC149)
                  Venturi inlet diameter to venturi throat diameter = 0.390/0.1283
Calculation of solids in vent gases (table 6)
     Solids, lbm = (grams/std ft^3 of gas)(Gas flow rate, lb/hr)(Flow time, hr)/507
```

TABLE 3. - TEST SEQUENCE OPERATING PARAMETERS (a)

Test series	First reading	Last reading	Combustion coal type	Combustion coal sulfur sorbent type	Combustion bed depth, in.	Number of combustor coolant rakes used	Planned fuel-air ratio	Planned sorbent- coal ratio	Planned combustor pressure, psia	Planned bed temper- ature, F	Test elapsed time, hr
A1A A2A A11A A10A A9A A9B A1B A10B A11B A8B A7B A6B A5B A3B A6B A12B A17B	184 195 210 225 241 260 270 281 292 310 318 331 337 343 382 360 377	194 209 224 240 256 267 280 291 309 317 330 336 342 351 359 367 382	Pitt. 8	Limestone	97 	3	0.06 .09 .11 .08 .09 .09 .07 .06 .07	0.12 .18 .18 .12 .15 .18 .06 .12	60 75 40 80 60 70 50 40 50 40 25 70	1600 1700 1600 1650 1550 1450 1600 1600 1700	8.0 7.5 7.5 3.5 3.5 3.5 3.5 6.5 2.5 3.5 3.5 3.5
C1 C3 C8 C11 C12 C16 C17	399 411 419 431 440 448 455	409 418 424 438 447 454 462			44		.10 .07 .07	.06 .18 .12	60 50 60 60 25 40 70	1600 V 1700	4.0 3.5 2.5 3.6 3.0 3.0
D6 D7 D2 D1 D1 O D3 D4	468 481 493 511 519 533 547	480 492 503 518 531 546 558			68		.06 .06 .06 .05 .05 .06		40 60 80	1650 1650 1650 1450 1450 1750 1850	6.0 5.5 4.5 3.5 6.0 6.5
E1 E2 E3 E4 E5 E6 E9 ^a E8 E19 E13A E13B	111 123 132 156 176 192 208 249 272 283 281	119 131 155 175 190 202 221 263 281 286 291				4	.08 .06 .10 .08	.13	40 60 80	1700 1500 1700 1700 1700 1800 1800	3.5 4.0 5.6 5.5 5.5 5.0 3.5 7.0 4.5 1.5 2.0

 a All tests were made using 100° F input air except test series E9, where 300° F input air was used.

TABLE 3. - Continued. (b)

					771000 01 0	one maca. (U /				
Test series	First reading	Last reading	Combustion coal type	Combustion coal sulfur sorbent type		Number of combustor coolant rakes used	Planned fuel-air ratio	Planned sorbent- coal ratio	Planned combustor pressure, psia	Planned bed temper- ature, F	Test elapsed time, hr
E14 E11 E12 E15	296 313 324 339	308 320 332 342	Pitt. 8	Limestone	68	4	0.09 .07 .09 .07	0.10 .10 .10 .16	80	1800 1600 1600 1600	3.0 3.5 3.5 1.5
F1 F2 F3 F4 F6 F5 F7 F8 F9 F19 F16	393 403 419 435 449 465 501 522 557 563 572 584	491 412 433 446 461 471 505 530 560 570 580 590			97		.08 .06 .10 .07 .08 .09 .08 .08 .07	.13 .16 .10 .06	60 40 80 80 60	1700 1700 1700 1800 1900 1900 1700 1700 1700 1800 1800 1900	4.0 4.5 3.5 4.5 3.5 2.0 2.0 4.5 3.5 4.0 3.0
G2 G3 G6 G1 G5 G10 G13 G15A G15B G14 G17 G8 G16 G22 G23 G24 G17 G18 G19	617 630 641 672 684 697 707 735 748 781 795 811 821 835 846 864 873 887 892 902 914 923	626 638 649 680 694 705 715 740 751 788 803 819 829 843 853 871 881 890 900 910 922 929			68	None	.04 .03 .04 .04 .04 .05 .04 .05 .05 .04 .04	.13 .10 .10 .16 .10 .10 .10 .10 .10 .10 .10 .10	80	1700 1900 1800 1800 1600 1700 1600 1600 1600 1600 1700 1800 1800	4.5 4.0 4.0 4.5 4.0 4.5 5.5 4.0 21.5 3.5 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
H1 H2 H3 H4 H5A H5B H6 H7 H8 H9 H10 H11	673 685 694 702 712 731 750 758 767 776 786 795 805	679 689 701 711 722 734 754 765 774 784 793 803 813			44	4	.07 .06 .06 .07 .07 .06 .06 .07 .07	.13	50 	1700 1900 1700	3.0 2.5 3.5 2.5 1.5 2.0 3.5 4.0 4.0

TABLE 3. - Continued. (c)

						(c)				
Test series	First reading	Last reading	Combustion coal type	Combustion coal sulfur sorbent type	Combustion bed depth, in.	Number of combustor coolant rakes used	Planned fuel-air ratio	Planned sorbent- coal ratio	Plannea combustor pressure, psia	Planned bed temper- ature, F	Test elapsed time, hr
H14 H13 H15 H16 H18 H19 H20 H23 H24 H25	815 843 854 863 873 884 893 904 914 923 932	821 851 861 871 880 891 900 913 922 931 938	Pitt. 8	Limestone	44	4	0.07 .06 .07 .06 .07	.30 .30 .06 .13	80 80 50 50 50 80	1900 1700 1700 1700 1700 1900	3.0 3.5 3.5 4.0 3.5 3.5 4.0 4.0 3.0
11 12 13 14 15A 15B 16 17 18 19 110A 110B 111 112	947 956 968 977 988 992 1008 1017 1030 1035 1044 1051 1055 1074 1094	955 966 975 985 991 995 1015 1024 1034 1043 1050 1054 1063 1082 1101		Dolomite			♥ .06 .08 .07 .06 .06 .07 .06 .07 .06 .07 .06 .07 .06 .07	.06 .25 .25		1700 1700 1700 1900 1900 1900 1700	4.0 5.0 3.5 4.0 1.5 3.5 2.0 4.0 3.0 4.0 3.5
J1 J2 J3 J4 J5 J6 J7 J8 J9	1139 1159 1174 1186 1206 1216 1226 1250 1268	1156 1167 1180 1201 1214 1222 1239 1260 1271	Ohio		68		.09 .06 .09 .06 .06 .09	.13		1700 1700 1900 1700 1700	5.0. 4.0 3.0 3.2 3.3 3.0 3.1 4.5 2.5
K1 K3 K4 K2 K7 K8 K5 K9 K10 K11 K14 K13 K15	1351 1410 1424 1435 1448 1460 1471 1489 1506 1522 1534 1545 1555 1578 1595 1611	1360 1423 1432 1446 1458 1467 1498 1517 1531 1543 1533 1572 1589 1608 1618		Limestone			.06 .09 .06 .09 .06 .09 .06 .09 .06	.13	60	1700 1900 1900 1700 1700 1700 1900 1900	4.1 3.5 4.0 4.5 2.5 2.0 4.5 4.0 4.5 3.5

TABLE 3. - Continued. (d)

Test series	First reading	Last reading	Combustion coal type	Combustion coal sulfur sorbent type	Combustion bed depth, in.	Number of combustor coolant rakes used	Planned fuel-air ratio	Planned sorbent- coal ratio	Planned combustor pressure, psia	Planned bed temper- ature,	Test elapsed time, hr
L1 L2 L3 L4 L5 L6	2088 2103 2128 2154 2168 2193	2102 2125 2151 2167 2189 2202	Ohio	Limestone	68	4	0.06 .09 .09 .06 .06	0.13 .06 .06	80	1700 1700 1900	6.0 5.6 5.5 9.0 2.1
M1 M2 M3 M4 M5 M6 M7 M8 M9 M11 M12	2215 2232 2245 2257 2259 2282 2294 2306 2313 2329 2342	2227 2244 2256 2268 2281 2293 2304 2312 2328 2341 2352				0	.04 .05 .04 .04 .05 .05 .04 .04	.13		1700 1700 1900 1700 1700 1700 1900 1900	6.0 6.5 5.5 6.0 5.5 5.5 7.5 6.0 5.0
N1 N2 N5A N5B N6 N55A N55B N7	2492 2511 2530 2543 2553 2566 2581 2594	2510 2529 2542 2552 2564 2580 2593 2604	Pitt. 8				.05 .06 .05 .05	.13	60 80	1900	9.0 8.0 5.5 4.5 5.5 7.0 6.0 5.0
CASO CAS1 CAS2 CAS3 CAS4	1713 1668 1770 1849 1990	1768 1706 1841 1989 2078	Ohio Pitt. 8			2 4 2 0 0	.06		75	1800	25.5 18.0 30.5 77.0 44.8
TB1A TB1B TB1C TB1D TB1E TB1F TB1G TB1H	22 30 53 116 135 146 177 223	27 47 98 131 145 163 220 270			56	3		.12 .12 .12 .13		1600 1600 1600 1700 1700 1800	2.5 8.5 22.5 14.0 10.0 17.0 43.0 48.0
TB2A TB2B TB2C TB2D TB2E TB2F TB2G	285 338 353 374 386 407 415	301 352 365 383 400 412 427			68	0	.05				18.0 24.0 11.8 9.0 14.0 4.0 6.5

TABLE 3. - Concluded.

Test series	First reading	Last reading	Combustion coal type	Combustion coal sulfur sorbent type	Combustion bed depth, in.	Number of combustor coolant rakes used	Planned fuel-air ratio	Planned sorbent- coal ratio	Planned combustor pressure, psia	Planned bed temper- ature, F	Test elapsed time, hr
T3A T3B T3C T3D T3E T3F	83 166 289 375 453 618	135 280 3273 448 609 647	Pitt. 8	Limestone	68	0 0 0 2 2 2	0.05 .05 .05 .06 .06	0.12	75	1600 1800 1500	59.0 58.0 55.0 37.0 95.0
T4 T5 T6A T6B	1285 1631 2359 2429	1331 1665 2421 2482	Ohio Ohio Pitt. 8	Dolomite Limestone	. "	4 4 0 	.08 .08 .05	.13		1800 1700 1900	21.5 16.5 30.0 26.5
T7A T7B T7C T7D1 T7D2	2605 2790 2990 3171 3311	2788 2960 3170 3310 3432									90.5 86.5 100.7 65.5 58.5

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TABLE 4. – PFB TEST RESULTS PROVIDED ON MICROFICHE SUPPLEMENT

TABLE 5. - COAL AND SORBENT ANALYSIS

(a) Coal analysis

Component	Pittsburgh #8	Ohio									
•	Content, wt%										
Proximate											
Moisture Ash Volatile Fixed carbon	2.12 8.20 37.41 52.27	3.24 9.64 37.17 49.95									
Heating value, Btu/lb	13 274	12 767									
Ulti											
Carbon Hydrogen Nitrogen Sulfur Oxygen Ash	75.38 5.14 1.49 1.99 7.61 8.38	73.66 5.08 1.25 2.39 7.61 9.97									
Silica as a % of the ash Ferric oxide as a % of the ash	46.21 19.29	47.06 21.55									
Alumina as a % of the asl Lime as a % of the ash	n 25.68 1.57	24.67 1.11									

(b) Sorbent analysis (dry basis)

Component	Limestone	Dolomite			
	Content,	wt%			
Calcium oxide	53.97	29.62			
Carbon dioxide	43.42	46.00			
Silica	1.17	1.46			
Magnesium oxide	1.16	20.31			
Alumina	.14	.53			
Ferric oxide	.11	.53			
Sulfur	.08	.16			

TABLE 6. - PFB REACTOR LOADING

First test after loading bed	Type of old bed material added	Quantity of old bed material added, lb	Type of new bed material added	Quantity of new bed material added, lb	Total quantity of bed material added, lb	Quantity of bed material removed after last test	Last test
Checkout A1A A9B C1 D6 E1 E17 F1 F7 G2 G15 H1 H13	Limestone None Limestone	208 283 507 252 ? 250 None 217 292 40 200 205 210 130	Limestone Limestone None Limestone None Limestone None Limestone Limestone None	548 354 215 None ? None 270 None 244 540 None	756 637 722 252 ? 250 270 217 536 580 200 205 210 130	101	Checkout Checkout A9A A17B C17 D4 E8 E15 F5 F27 G12 G19 H14 H26
J1 J1	♥ Limestone and Dolomite	91 57/67	Dolomite Dolomite	10 66	101 195	117 130	I13 J9
K1 K3 L1 M1 N1 CAS1 CAS2 CAS3 CAS4 TB1A TB1D TB1G TB1H TB2A TB2B TB2B TB2B TB2B TB2B	Limestone None Limestone	167 173 206 182 216 138 182 200 None 195 200 145 125 228 270 210 300 198	None Limestone None Limestone None None None None Limestone None Limestone None Limestone None Limestone Limestone	34 27 10 30 None 62 None 15 250 None None None 80 90 None	201 200 216 212 216 200 182 215 250 195 200 145 145 228 350 300 300 198 205	140 130 112 164 194 125 169 ? 216 ? 145 125 160 232 210 ?	K1 K16 L6 M16 N7 CAS1 CAS2 CAS3 CAS4 TB1C TB1F TB1G TB1H TB2A TB2E TB2E TB2E TB2E TB2E
T3C T3E T3F T4	Limestone	205 ? ? 210 25/130	Dolomite	40	? ? 210 200	231 ? 250 ? 184	T3D T3E T3F T4
T5 T6A T6B T7A T7B T7C T7D	and Dolomite Limestone Limestone None Limestone	134 205 None 215 215 215 208	Limestone Limestone Limestone None	66 10 210 None	200 215 210 215 215 215 215 208	140 142 215 250 275 173 100	T5 T6A T6B T7A T7B T7C T7D

TABLE 7. - RC13 PFB TEST RESULTS: SYSTEM SOLIDS MASS BALANCE

											(=)			
Test	Test date	Test time span, hr	Initial bed weight, lb	Total coal used, lb	Ash in coal used, lb	Total sorbent used, lb	Solids in sorbent used, lb	Bed solids dis- charge, lb	Turbine sepa- rator solids, lb	tors 1 to 4	Exhaust gas loading g/std ft3	Exhaust gas solids, lb	Final bed weight, lb	Gas flow rate, lb/hr
A1A A2A A11A A9A A9B A1B A10B A11B A8B A7B A6B A5B A16B A17B C1 C3 C8 C11 C12 C16 C17 D6 D7 D1 D10 D3	3-10-77 3-10-77 3-10-77 5-11-77 5-11-77 5-18-77 5-18-77 5-19-77 5-20-77 6-2-77 6-2-77 6-3-77 7-27-77 7-27-77	7.95 7.47 7.32 7.45 3.53 3.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 2.50 3.50 3.50 3.50 3.50 3.50 3.50 3.50 3	722 252 195 250 250	279 253 272 127 125 121 127 124 118 235 78 100 102 109 98 31 133 123 89 117 105 114 129 224 192 145 105 138 217	22.9 20.7 22.3 10.4 10.2 9.9 10.4 10.2 9.7 19.3 6.4 8.9 8.0 2.5 10.8 10.1 7.2 9.6 8.6 9.3 10.6 11.3 17.8	27 73 51 31 12 25 24 20 12 40 6 7 10 10 13 23 10 10 15 16 8 10.5 17 20 11 4 4.7	15.4 41.6 29.1 17.7 6.8 14.3 13.7 11.4 	50 31 23 36 15 14 13 13 16 4 12		9.5 6.6 5.2 6.9 4.3 4.0 3.6 7.6 8.3 4.9 8.5 .7 2.2 11.6 1.1 4.6 3.5 5.5	3.360 1.226 1.734 2.350 1.865 1.635 1.847 2.090 1.967 1.886 3.020 2.880 2.540 2.760 2.770 1.551 2.440 1.657 1.552 1.414 1.992 2.340 1.028 3.400 1.807 1.791 1.768 1.768 1.419	30.7 10.2 14.1 19.8 7.2 5.8 7.9 8.2 7.6 14.7 7.7 7.0 10.0 10.8 6.2 4.8 11.3 6.7 4.5 5.8 8.1 4.2 24.1 11.9 9.3 7.0	180	5865 5665 5769 5606 5606 5606 5606 5606 5606 5606 56
D4	7–27–77	6.50		159	13.0	53.4	30.4						228	587
TB1A TB1B TB1C	5-25-77 5-26-77 5-26-77	2.0 4.0 2.0	180 195	91.6 297	7.5 24.4	6.0 17.9	3.4 10.2	12.3 31		1.8 17.5	2.70 2.26 2.51	6.1 10.4 5.7		571 584 572
TB1D TB1E TB1F TB1G TB1H	6-9-77 6-10-77 6-10-77 6-16-77 7-14-77	2.3 2.0 2.0 2.0 2.7	200 145 145								1.21 3.38 1.89 .45 .91	3.5 8.7 4.8 1.1 3.0	145 125 160	635 655 643 625 629
TB2A TB2B TB2C	8-4-77 8-11-77 8-12-77	? 5.1 6.5	228 350 	322	26.4	38	21.7				1.53 1.62 .66	9.6 5.0	232 210	575 592 590

TABLE 7. - Continued. (b)

						IADL	.E / CO	nt mueu.	(5)					
Test	Test date	Test time span, hr	Initial bed weight, lb	Total coal used, lb	Ash in coal used, lb	Total sorbent used, lb	Solids in sorbent used, lb	Bed solids dis- charge, lb	Turbine sepa- rator solids, lb	Separa- tors 1 to 4 solids dis- charge, lb	Exhaust gas loading g/std ft ³	Exhaust gas solids, lb	Final bed weight, lb	Gas flow rate, lb/hr
TB2D TB2E TB2F TB2G	8-16-77 8-17-77 8-31-77 8-31-77	2.5 3.0 3.7 ?	300 300	114	9.3	5.4	3.1				1.93 3.52 1.42 1.65	5.8 12.0 6.2		610 575 591 591
E1 E2 E3 E4 E5 E6 E9 E13A E13A E13B E11 E12	3-22-78 3-22-78 3-22-78 3-23-78 3-24-78 3-28-78 3-29-78 3-29-78 3-29-78 3-29-78	3.5 4.0 5.5 5.5 5.5 5.5 6.98 4.5 1.5 3.5 3.5 1.5		195 211 244 253 259 168 146 337 186 71 88 126 131 115	16.0 17.3 20.0 20.7 21.2 13.8 12.0 27.6 15.3 5.8 7.2 10.3 10.7 9.4 4.5	20 25 29 30 30 19 17 39.2 20.3 6.3 7.8 11.1 11.0 14.6 8.1	11.4 14.3 16.5 17.1 17.1 10.8 9.7 29.3 11.6 3.6 4.4 6.3 8.3 4.6	8.32 20.72 6.22 14.65 9.20 .70 13.82 2.59 3.66 1.49 4.11 2.11 .54	2.54 7.12 1.86 8.56 1.78 2.48 2.10 1.132	1.77 4.18 1.34 10.30 8.73 13.74 2.28 6.68 3.66 .23 .01	.567 1.404 .707 .783 1.394 .727 .538	5.1 14.6 4.8 12.3 9.4 5.1 3.0 3.0 2.0 3.7 4.7 6.6		542 875 399 498 507 416 474 569 548 665 679 488 550 555
F1 F2 F3 F6 F4 F7 F8 F9 F19 F16 F27	4-12-78 4-12-67 4-12-78 4-13-78 4-13-78 4-19-78 4-20-78 4-20-78 4-21-78 4-21-78 4-21-78	4.02 4.50 3.50 4.50 2.00 4.00 1.50 3.50 4.00 3.00		188 219 132 191 230 68 153 45 179 180	15.4 18.0 10.8 15.7 18.9 5.6 12.5 3.7 14.7 14.8 11.8	22.0 25.7 15.4 22.2 26.8 7.9 18.0 6.9 19.2 16.5 7.6	12.5 14.6 8.8 12.7 15.3 4.5 10.3 3.9 10.9 9.4 4.3	.14 .40 .08 1.07 .59 	16.97	8.42 31.77 14.15 14.28 7.22 	1.751 3.012 3.796 1.415 2.309 	7.8 21.4 10.0 6.2 14.1 6.9 4.5 7.5 8.4 9.1		562 801 380 631 690 481 473 692 680 637
G2 G3 G6 G7 G5 G10 G9 G13 G12 G15A G15B G14	3-9-78 3-9-78 3-9-78 5-11-78 5-11-78 5-11-78 5-12-78 5-12-78 5-15-78 5-16-78 5-17-78	4.5 4.0 4.0 4.5 4.0 2.5 1.5 3.0 4.0	?	79 111 91 75 165 129 106 52 47 85 118 53	6.5 9.1 7.5 6.2 13.5 10.6 7.6 4.3 3.9 7.0 9.7	9 13 11 6 15 11 9 8 7 13 18	5.1 7.4 6.3 3.4 8.6 6.3 5.1 4.0 7.4 10.3	2.25 17.34 6.48 .03 6.76 15.69 3.46 7.00 17.03 24.09 13.08 2.59	3.96 9.83 5.82 2.03 7.67 7.89 5.03 4.33 3.20 4.89 3.77 2.05	.20 .04 .17 1.90 1.79 2.28 2.23 1.43 1.44 1.20	.164 .146 .137 .538 .387 .452 .295 .552 9.380 .298 .312	.8 .9 .7 1.8 2.9 3.0 1.3 1.7 .6 1.2 1.4		574 793 607 418 851 845 558 635 555 594 411

TABLE 7. - Continued.

						INDL	L / CO	iicinueu.	(6)					
Test	Test date	Test time span, hr	Initial bed weight, lb	Total coal used, lb	Ash in coal used, lb	Total sorbent used, lb	Solids in sorbent used, lb	Bed solids dis- charge, lb	Turbine sepa- rator solids, lb	tors 1 to 4	Exhaust gas loading g/std ft ³	Exhaust gas solids, lb	Final bed weight, lb	Gas flow rate, lb/nr
G11 G7 G8 G16 G22 G23 G24 G17 G18 G19	5-17-78 5-17-78 5-17-78 5-18-78 5-18-78	3.5 3.5 4.0 1.5 4.0 4.0 4.0		106 54 66 72 50 26 122 68 92 76	8.7 4.4 5.9 4.1 2.1 10.0 5.6 7.5 6.2	9 5 4 3 1 15 8 11 9	5.1 2.9 2.9 2.3 1.7 .6 8.6 4.6 6.3	13.64 4.17 9.20 13.86 3.06 7.05 13.71 6.18 17.28 13.11	13.92 2.31 3.12 2.71 2.48 3.37 6.67 2.69 5.62 4.44	2.00 .01 1.30 .27	.492 .175 .872 .447 .584 .563 .812 .766 .413	3.3 .6 3.8 1.9 2.0 1.0 5.1 3.6 2.3 2.4		851 415 631 629 435 585 797 596 710 685
T3A-1 T3A-2 T3A-3 T3B T3C T3D T3E	7-19-78 7-19-78 7-19-78 7-27-78 7-31-78 8-3-78 8-7-78	1.5 3.0 4.3 34.0 7.0 37.0 23.0	198 205 	1150 914 891 2390	94.3 74.9 73.1 196.0	140 109 108 288	79.8 62.1 61.6 164		9.55 2.75 3.90 7.65		.224 .080 .030 .012	.42 .29 .16 .09	205 231 	591 591 591 639 635 676 637
T3F	9-12-78	14.5												664
H1 H2 H3 H4 H5A	9-19-78 9-19-78 9-19-78 9-20-80 9-20-80	3.00 2.00 3.50 4.50 2.50		106 84 155 210	8.7 6.9 12.7 17.2	5.5 4.1 7.6 10.3	3.1 2.3 4.3 5.9	2.61 9.36 7.52 10.15	12.66 9.86 10.56 6.47	.01 .03 2.37 4.07	.327 .677 4.496 3.644	.8 1.7 19.8 17.7		424 622 637 548 709
H5B H6 H7 H8 H9	9-20-80 9-21-80	1.50 2.00 3.50 3.50 4.00		183 138 224 	15.0 11.3 18.4 18.0	9.1 7.0 11.8 26	5.2 4.0 6.7 14.8	2.24 8.77 8.57 15.21	13.87 6.77 5.63 10.98	12.62 3.87 5.52 	4.318 2.468 2.015 1.413 .410	12.0 9.1 13.2 2.3		937 932 949 709 703
H10 H11 H12	▼ 9–22–78 9–22–78	3.50 4.00 4.00		206 212	16.9 17.4	24 26	13.7 14.8	10.01 11.36	7.12 4.37	4.67 2.57	1.776 .195 2.299	10.9		888 714 418
H14 H13 H15 H16 H18	9-22-78 9-27-78	3.00 3.50 3.50 4.00 3.50		159 167 167	13.0 13.7 13.7	19.3 19.0 19.7	11.0 10.8 11.2	9.52 11.16 3.07 3.22 2.37	10.76 13.12 25.92 35.12 12.21	5.02 11.71 28.83	1.125 .839 4.841	4.7 3.8 18.4		709 652 552 682 625
H19 H20 H23 H24	9-28-78	3.50 3.50 4.50 4.00		179 190 272 206	14.7 15.6 22.3 16.9	43 48 25 20	24.5 27.4 14.3 11.4	4.72 3.02 1.37 3.01	8.86 24.42 37.42 14.42	1.03 .03 25.42 2.42	.801 2.343 2.298 1.870	3.8 11.4 14.6 10.5		684 706 716 715
H25 H26	▼ 9–29–78	4.00 3.00		233	19.1	27 	15.4 	2.97	14.91	15.02	3.769 	21.3		716 717

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Test	Test date	Test time span, hr	Initial bed weight, lb	Total coal used, lb	Ash in coal used, lb	Total sorbent used, lb	Solids in sorbent used, lb	Bed solids dis- charge, lb	Turbine sepa- rator solids, lb	Separa- tors 1 to 4 solids dis- charge, lb	Exhaust gas loading g/std ft ³	Exhaust gas solids, lb	Final bed weight, lb	Gas flow rate, lb/hr
I1 I2 I3 I4 I5B I6 I7 I8 I9 I10A I10B I11 I12	10-3-78 10-3-78 10-3-78 10-4-78 10-5-78 10-6-78 10-6-78	4.00 5.00 3.50 4.02 1.50 1.50 3.52 2.00 4.00 3.00 4.00 4.00 3.50		239 327 184 160 71 74 218 245 120 200 125 60 181 226 239	19.6 26.8 15.1 13.1 5.8 6.1 17.9 20.1 9.8 16.4 10.3 4.9 14.8 18.5 19.6	40.5 53.6 29.4 25.8 12.9 21.6 16.4 8.1 14.7 21.6 64.7 80.7 86.1	23.1 30.6 16.8 14.7 7.2 7.4 12.3 9.3 4.6 8.4 10.7 12.3 36.9 46.0 49.1	8.12 10.81 10.92 9.32 	16.22 19.31 5.97 1.42 	7.57 .57 .22 1.92 	3.611 3.542 2.164 1.983 3.252 6.030 5.529	20.6 25.5 6.5 11.4 29.8 40.2		832 1021 656 502 684 741 827 1038 763 729 575 561 627 834 1052
J1 J2 J3 J4 J5 J6 J7 J8 J9	11-7-78 11-7-78 11-8-78 11-8-78 11-9-78 11-9-78	5.00 4.00 3.00 3.20 3.27 3.00 3.05 4.50 2.47		181 191 192 154 210 209 145 228 99	17.4 18.3 18.4 14.8 20.2 20.1 13.9 21.9 9.5	23.1 24.3 24.5 19.6 26.7 13.0 9.0 14.2	13.2 13.9 14.0 11.2 15.2 7.4 5.1 8.1 3.5	.10 .24 .52 .32 .09 .12	20.32 26.17 35.33 9.97 41.43 17.92 7.17 11.77 22.62	.14 .11 	.362 .346 3.353 2.119 2.551 .840 4.099	1.4 1.9 20.1 7.0 16.7 5.0 11.1		385 684 1011 521 1014 1007 450 771 376
K1 K3 K4 K2 K7 K8 K6 K5 K9 K10 K12 K11 K14 K13 K15 K16	11-15-78 11-29-78 12-5-78 12-6-78 12-6-78 12-6-78 12-6-78 12-7-78	4.08 3.05 3.52 4.00 4.00 3.50 4.02 4.50 2.52 2.02 4.50 3.98 4.05 2.53 3.02 1.52	200	1060 163 138 209 148 152 168 187 292 126 92 196 268 180 88 127 58	101.8 15.6 13.2 20.1 14.2 14.6 16.1 18.0 28.9 12.1 8.8 18.8 25.7 19.3 8.4 12.2 5.6	128 21 17.9 27.1 15.5 9.4 10.2 11.4 17.8 7.7 18.3 39.2 53.7 36.1 17.6 16.7	73.0 12.0 10.2 15.5 9.5 5.4 5.9 6.5 10.2 4.4 10.4 22.3 30.6 20.6 10.0 9.5 4.4	.14 .13 4.34 .09 .14 2.61 .89 2.45 .31 .20 1.08 2.03 5.03 .21 .25 .96	12.60 15.63 8.08 25.24 11.16 10.75 13.63 13.85 72.06 14.59 15.18 16.65 77.31 13.65 12.44 14.96 14.01	.27 .31 7.49 6.11 .08 1.53 .96 25.50 9.84 1.99 3.24 41.81 .25 2.23 1.28	1.385 .431 .102 1.332 .580 .136 2.009 1.871 3.002 .693 .419 1.534	36.81 2.2 .3 8.8 1.9 .5 10.0 6.7 26.0 1.5 .8	184	627 645 450 955 412 415 722 455 974 470 649 982 433 376 449 450

TABLE 7. - Concluded.

(e)

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•	Test	Test date	Test time span, hr	Initial bed weight, lb	Total coal used, lb	Ash in coal used, lb	Total sorbent used, lb	Solids in sorbent used, lb	Bed solids dis- charge, 1b	Turbine sepa- rator solids, lb	Separa- tors 1 to 4 solids dis- charge, 1b	Exhaust gas loading g/std ft ³	Exhaust gas solids, lb	Final bed weight, lb	Gas flow rate, lb/nr
	T5	12-13-78	16.5	200	652	62.6	84.7	483		11.10		1.482	23.02	140	645
(CAS1 CASO CAS2 CAS3 CAS4	1-10-79 1-19-79 1-30-79 2-14/16-79 2-21/23-79	16 21 29 56 36	200 200 182 215 250	866 1030 1200 2100 1260	83.1 84.5* 98.4* 172* 103*	112 133 155 267 161	63.8 75.8 88.4 152.2 91.8		59.3 44.5 47.2 92.36 55.0		2.170 .518 .833 .057 .31	42.95 13.68 29.3 3.88 14.3	125 182 169 216	642 645 638 642 644
. ! . !	L1 L2 L3 L4 L5 L6	3-7-79 3-8-79 ↓ ↓ 3-9-79	6.00 5.57 5.55 5.50 9.00 2.05		334 166 225 362 447 91	32.1 15.9 21.6 34.8 42.9 8.7	42.4 21.1 28.8 46.1 26.8 5.4	24.2 12.0 16.4 26.3 15.3 3.1	.79 .66 .81 .78 3.52	31.58 11.99 27.73 66.78 51.88 8.93	1.24 1.73 .33 .76 12.58 4.92	.73 .65 3.19 1.85 3.85	7.0 3.6 33.4 32.0 7.5		808 322 512 965 974 482
	M1 M2 M3 M4 M5 M6 M7 M8 M9 M11 M12	3-13-79 3-13-79 3-14-79 3-15-79 3-16-79	6.00 6.00 5.50 5.50 6.00 5.50 3.00 7.50 6.00 5.00		127 71 95 194 196 110 60 167 162 150	12.2 6.8 9.1 18.6 18.8 10.6 	16.6 9.2 12.4 24.5 11.4 6.4 	9.5 5.2 7.1 14.0 6.5 3.6 2.0 19.0 18.5 17.2	.16 .12 .08 1.83 .86 .11 .19 .19 .19	12.09 8.77 9.08 30.78 30.64 8.34 7.96 11.10 8.74 11.60 44.18	4.56 6.35 .97 .13 .15 .02 .07 .93 .11 .06 2.39	.49 .18 .04 .06 .52 .09 .21 .16 .16	3.2 .8 .2 .5 4.7 .4 		554 360 460 766 767 454 366 556 555 456 785
	T6A T6B	3-27/28-79 3-23/24-79	30.0 26.5	215 210	903 790	74.0 64.8	119 101	67.8 57.6	2.69 2.08	59.67 23.18	1.19 7.55	2.32 7.32	11.95 237.75	142 215	660 645
1 1 1 1	N1 N2 N5A N5B N6 N55A N55B N7	5-1-79 5-2-79 5-2-79 5-3-79 5-3-79 5-3-79 5-4-70 5-4-79	9.00 8.00 5.50 4.52 5.50 7.02 6.00 5.00		288 235 161 134 110 212 181 82	23.6 19.3 13.2 11.0 9.0 17.4 14.8 6.7	37.3 30.5 21.2 17.5 14.2 27.7 23.5	21.3 17.4 12.1 10.0 8.1 15.8 13.4	.89 .31 .28 .40 .37	33.12 10.47 9.55 2.98 10.61 9.71 3.24	.75 .49 .20	.41 .21 .31 .20 .12 .08 .09	4.8 2.2 2.2 1.2 .6 .7 .7	 ,	659 655 640 653 439 655 658 337
-	T7A T7B T7C T701 T7D2	5-18/11-79 5-15/18-79 6-11/15-79 6-18/21-79 6-21/23-79	42.5 38.5 28.2 17.5 34.5	215 215 215 208	2820 2580 2320 2140 1910	231 212 190 175 157*	371 333 302 277 244	211.5 189.8 172.1 157.9 141.9	54.47 26.23 5.65 64.59	169.79 198.5 181.0 175.14	.75 .08 1.17	.051 .107 .062 .019	6.27 10.12 5.97 2.04	250 275 173 	695 708 690 715

TABLE 8. - RC13 PFB TEST RESULTS: REACTOR BED AND EXHAUST GAS SOLIDS CHEMICAL COMPOSITION (a)

[ASTM D-3174 and D-3175 for coal analysis.]

Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	C0 ₂	Fe ₂ 0 ₃	Magnesia	s0 ₃	Miscell- aneous
4440							Content,	wt%						•
A1A 5-10-77 A2A 5-10-77 A11A 5-10-77 A10A 5-10-77 A9A 5-10-77 A9B 5-18-77 A10B 5-18-77 A10B 5-19-77 A11B	Bed Gas Bed Gas Bed Gas Bed Gas Bed Gas Bed Gas Bed Gas	76.5 87.4 97.1 96.4 92.3 89.5 94.2 79.3 97.9 81.0 97.9 85.1 98.5 86.9 98.3	25.2 13.0 	3.7 2.9 2.1 5.2 6.1 7.5 7.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1	7.3 34.3 38.8 3.2 39.0 4.7 36.3 3.8 33.9 4.2 34.3 4.2 31.6 6.9 29.7 4.5	47.6 18.3 12.1 64.6 11.0 63.9 11.8 60.3 5.6 66.7 5.0 62.2 85.1 10.8 62.2	0.3 	0.6 16.5 .6 16.5 .6 16.5 .6 10.7 .6 10.8	3.1 17.7 21.6 21.0 2.0 19.2 4 18.3 	21.1 2.9 16.6 1.0 16.6 9.8 2.5 5.7 1.5 5.7 1.5 5.7 1.7 1.7 1.7 1.7		0.6 .3 .2 .8 .3 .5 .7		
5-19-77 A7B 5-19-77 A6B 5-19-77 A5B 5-20-77 A1B 5-20-77 A12B 5-20-77 A17B 5-20-77 C1 6-2-77 C3 6-2-77 C3 6-3-77 C11 6-3-77 C12 6-3-77	Gas Bed Gas	86.5 98.4 83.8 92.5 81.1 88.6 89.9 80.2 97.5 80.1 98.8 93.5 86.4 78.9 97.5 97.5 86.4 78.9 97.5 86.4 78.9 97.5 86.4 78.9 97.5 86.4 78.6 98.3 89.8 98.3 89.8 99.4 99.8	14.8 1.5 15.4 7.6 16.5 11.7 15.4 10.7 16.3 2.6 17.0 1.5 12.7 1.2 9.6 14.9 18.5 3.1 14.8 6.2 16.0 2.1 15.3 17.9	4.7 3.7 3.5 3.5 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	28.4 5.0 31.5 5.1 30.6 4.1 23.6 3.8 23.2 5.4 26.8 7.0 24.9 4.2 35.8 5.0 30.2 30.8 29.3 5.4 30.6 4.1 20.6 4.1 20.6	13.3 62.2 10.0 57.1 8.0 6.2 51.8 9.4 60.2 9.3 59.9 3.5 64.1 12.2 53.1 9.0 63.3 9.4 59.9 8.5 63.3 10.7 61.1 8.3	-3 -3 -3 -3	16.5 .1 .8 2.4 2.4 12.1 12.1 .6 3.4 .6 2.9 24.5 .6 16.5 2.6 6.6 4.3 3.9	1.8	2.1 1.1 .8 9.7 12.5 .5 10.5 3.0 1.9 1.0 4 1.1 .5 17.5 1.4 2.6 1.7 2.2 1.7		.6 .3		

TABLE 8. - Continued. (b)
[ASTM D-3174 and D-3175 for coal analysis.]

Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	C0 ₂	Fe ₂ 0 ₃	Magnesia	S03	Miscell- aneous
							Content,	wt%						•
C16 6-3-77 C17 6-3-77 D1	Bed Gas Bed Gas Bed	98.6 75.2 99.8 87.5	1.8 16.7 0.5 19.2	6.1 3.2 6.2 3.7 6.0	3.9 26.7 4.0 33.3	61.1 10.2 63.8 9.1	0.3	0.6 8.1 0.6 16.5		1.5 1.8 .6				
7-26-77 D2 7-26-77 D3	Gas Bed Gas Bed	90.9	14.7 13.0	3.3 6.0 3.5 6.0	35.0	7.5		.6 5.0 .6 16.5	16.5	.9 .5 .9 .8		0.8		
7-27-77 D4 ? D6 7-26-77	Gas Bed Gas Bed	93.9	7.5	3.3 6.0 3.3 6.0	36.8	11.2		16.5 .6 16.5		.4 .9 .4				
D7 7-26-77 D10 7-27-77	Gas Bed Gas Bed Gas	88.4 88.8 78.6	13.4 12.4 16.1	3.0 6.0 2.9 6.0 3.5	22.6 27.4 34.2	28.8 16.5 4.6		16.5 .6 16.5 .6 5.3		.8 .9 .4 .9				
TB1A TB1B TB1C	Bed Gas Bed Gas Bed			5.8 2.6 5.8 2.6 5.8				.6 16.5 .6 16.5		1.1 .5 1.1 .5				
TB1D TB1E	Gas Bed Gas Bed			2.6 6.0 2.8 6.0				.6 16.5 .6 16.5		1.1 .5 .9 1.7				
TB1F	Gas Bed Gas Bed			2.8 6.0 2.8 6.2				16.5 .6 16.5 .6		1.7 .9 1.7 .6				
6-16-77 TB1H 7-14-77 TB2A	Gas Bed Gas Bed			2.3 6.0 3.1 6.0	37.0 36.4 			16.5 .6 16.5	19.8 19.4 	.8 .9 .8	16.2			
TB2B	Gas Bed Gas Bed			3.3 6.0 3.3 6.0				16.5 .6 16.5 .6		.4 .9 .4 .9			 	
8-12-77 TB2D TB2E	Gas Bed Gas Bed Gas			.9 6.0 3.3 6.0 3.3	36.5	8.2 		16.5 .6 16.5 .6 16.5	17.5	.4 .9 .4 .9	15.7			

TABLE 8. - Continued. (c)
[ASTM D-3174 and D-3175 for coal analysis.]

Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	CO2	Fe ₂ 0 ₃	Magnesia	S0 ₃	Miscell- aneous
							Content,	wt%						
TB2F	Bed			6.0			0.3	0.6		0.9				
7000	Gas			3.3			1	16.5		.4				
TB2G	Bed			6.0			Į.	.6		.9				
E1	Gas Bed	81.8		3.3 3.7			Į.	16.5		.4				
LI	Gas	98.0		2.2			.4	.1 4.8		.9 .7			5.1 3.9	0.1 3.2
E2	Bed						0.7	.1						
	Gas						ŏ	3.0						
E3	Bed													
	Gas						.1	21.9						
E4	Bed						0 _	.2						
	Gas						.1	5.1						
E5	Bed						0	.1						
	Gas						.1	9.1						
E6	Bed	,					0	1.2						
	Gas		·				.2	17.6						
E9***	Bed .						0	.1						
	Gas						.1	12.5				~		
E11	Bed	95.7		9.2			.7	.1		1.4			7.4	.2
	Gas	97.6		2.6			•2	15.3		.8		~	6.8	1.7
E12	Bed						0	.1						
-10	Gas						.2	20.2						
E13	Bed						0	.1	~					
514	Gas						.2	3.6						
E14	Bed						0	0						
F0 .	Gas						.2	4.9						
E8	Bed	00.0		9.7	4.7	60.5	0	0		.7				
E15	Gas Bed	88.2		2.7	35.3	8.5	.2	9.2		.6				
£13	Gas						0 •2	.1						
F1	Bed						0.2	4.9 .1						
• •	Gas						0	4.1						
F2	Bed						Ö	7.1						
	Gas						Ö	2.2						
F3	Bed						ŏ	.6						
	Gas						.4	42.5						
F4	Bed	87.0		7.8	5.3	63.8	.4	.4		1.6			5.9	.2
	Gas	99.7		2.7	28.1	27.8	.4	1.9		.9			6.5	.3
F5 .	Bed													
	Gas													
F6	Bed						0	0						
	Gas .						.1	.9						
F7	Bed						0	.2						
	Cac													

TABLE 8. - Continued. (d)
[ASTM D-3174 and D-3175 for coal analysis.]

Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	co ₂	Fe ₂ 0 ₃	Magnesia	S0 ₃	Miscell- aneous
							Content,	wt%						•
F8	Bed Gas						0.1	0.5 2.3						
F9	Bed													
F16	Gas Bed						0.1	5.8 .1						
F19	Gas Bed						0.1	.3 .1						
F27	Gas Bed					_ 	0.1	0.6 0.						
G1	Gas Bed						0.1	.5						
G2	Gas Bed						0.1	3.4 0						
G3	Gas Bed	99.5		6.5			.1	5.2		1.8			5.4	0.1
G 5	Gas Bed	81.3		1.9		 	0	2.1 0		.7			5.5 	.1
G6	Gas Bed						0	.9 0						
G7	Gas Bed	99.1		9.1			.1 .2	1.5 .2		1.3			4.4	0
G8	Gas Bed	89.1		1.6			0.2	3.1 0		.5 			3.6 	.2
G9	Gas Bed						0.1	5.8 0						
G10	Gas Bed						0.1	2.6						
G11	Gas Bed						0	2.2 .1						
G12	Gas Bed						-1	.7 <u>-</u>						
G13	Gas Bed						0	.5 0						
G14	Gas Bed						0.2	6.2						
G15	Gas Bed						0.1	2.3						
G16	Gas Bed						0.1	1.3						
G17	Gas Bed						0.1	2.1						
G18	Gas Bed Gas						0,1	3.7 0						

*

TABLE 8. - Continued. (e)
[ASTM D-3174 and D-3175 for coal analysis.]

								-	-					
Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	CO ₂	Fe ₂ 0 ₃	Magnesia	S03	Miscell- aneous
							Content,	wt%						
G19	Bed	07.0			22 5	20. 1	0.1	0.2		0.8				
G22	Gas	97.9		3.3	33.5	20.1	0.1 0	0.3 0						
622	Bed Gas						.1	1.6						
G23	Bed						0.1	0						
025	Gas						ŏ	1.8						
G24	Bed.						ŏ	ō						
	Gas						.1	1.1						
T3A-1	Bed													
	Gas													
T3A-2	Bed													
T20 2	Gas			.8	44.8	9.0		.1	22.1		14.8	1.1		0.9
T3A-3	Bed				44.0			0	21.0		14.8	1.2		1.0
ТЗВ	Gas Bed			.8 	44.9 	9.1			21.0		14.0			
130	Gas			.8	44.8	9.0		.1	22.1		14.8	1.1		.9
T3C	Bed													
	Gas			1.0	44.1	8.9		.2	21.9		14.7	1.4		1.0
T3D	Bed													
	Gas			1.1	43.3	8.5		0	22.2		15.1	1.4		.9
T3E	Bed													
	Gas			.8	44.0	8.6		.5	21.1		15.8	1.4		1.0
T3F	Bed				20.7			1.0	10.5		17.9	1.5		2.6
LI1	Gas			3.0	32.7	7.3	0	1.0	18.5	1.0		1.5		2.0
H1	Bed Gas	92.1		7.9 1.0	7.5 39.0	60.0 7.1	.1	.1 7.9		.9				
H2	Bed			8.5	7.0	60.5	0.1	Ó		.7				
	Gas	89.9		2.3	32.3	11.8	.1	9.8		1.1				
Н3	Bed						0 -	0						
	Gas						.1	10.7						
Н4	Bed						0	.1						
	Gas						.2	18.1						
H5	Bed						0	.1						
	Gas						, .1	4.9						
Н6	Bed						0	.1 2.8						
H7	Gas			7.3	9.7	61.2	0.1	.1		.9				
пи	Bed Gas	99.0		1.0	38.1	14.1	.1	.8		1.0				
н8	Bed			6.3	9.9	64.7	0.1	.1		.7				
1.0	Gas	99.0		.7	43.7	8.6	.1	.8		.6				
H10	Bed			6.3	9.9	61.7	0 _	. 0		.8				
	Gas	98.8		1.2	38.9	13.4	.1	.5		1.1				
H11	Bed			6.3	9.3	62.9	0	0		.3				
	Gas	98.7		1.1	38.7	11.5	.1	.4		.8				

TABLE 8. - Continued. (f)

[ASTM D-3174 and D-3175 for coal analysis.]

H13	Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia			Alumina	co ₂	Fe ₂ 0 ₃	Magnesia	S0 ₃	Miscell- aneous
H14 Bed								Content,	wt%						
H14	H13														
H15	111.4	_													
H15	H14	_						-	-						
H16	H1E														
H16	1113														
H18	H16														
H18		_							3.3						
H19 Bed	H18				7.1	7.7	63.7	.1			.3				
H19			97.3	·		10.9	47.1	0	1.8		1.0				
H20	H19	Bed				7.7	62.9	. 0							
H23		Gas	98.5		3.3	21.9	34.2				1.5				
H23	H20	Bed													
H24 Bed 5.5 7.2 69.6 0 .2 1.1								-	.4						
H24	H23	_						-							
H25 Bed Gas Gas	1104								•8						
H25	H24							-							
The content of the	นวะ														
11 Bed	nzo	_							•1						
12 Bed 0 .2	11								1						
12 Bed								-							
Gas 0	12							-							
13 Bed 0 .1 </td <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		_						-							
I4 Bed	13														
14 Bed	-	_						0							
I5 Bed 0 .1 <td< td=""><td>14</td><td>Bed</td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>.1</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	14	Bed						0	.1						
Gas		Gas						.1	1.8						
16 Bed 0 .1 <td< td=""><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	15							-							
Gas 0 .3															
17 Bed 0 .1 </td <td>16</td> <td></td>	16														
I8 Bed 0 .9 <td< td=""><td>17</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>٠,٢</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	17								٠,٢						
18 Bed 0 0 <td>17</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	17							-							
Gas 1 1.0	TR.							-							
19 Bed 0 .1 </td <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>·</td>	10							-	-						·
Gas	19														
I10 Bed 0 .1 I11 Bed 0 .1		_ `						-							
Gas 11.0	110														
III Bed 0 .1 Gas1 1.4		_						.2							
	I11	_													
710 0-4	*	Gas							1.4						
112 Bed 0 .2	112	Bed						~ O	.2						

TABLE 8. - Continued. (g)
[ASTM D-3174 and D-3175 for coal analysis.]

Test	Solids	Neb	Volatilos	Cu16				·	-	60	5 . 0		60	M
and date	source	ASII	Volatiles	Suttur	SILICA	Calcia	nyarogen	Carbon	Alumina	LU2	rezug	Magnesia	203	Miscell- aneous
C. C.							Content,	wt%						
I13	Bed Gas						0	0 1						
J1	Bed						.1	1.0 3.7						
01	Gas						.1							
J2	Bed						.2 .1	10.3 .9						
UL.	Gas						0.1	.5						
J3	Bed						0							
03	Gas							.2						
J4	Bed						.1	4.2						
04	Gas												~	
J5	Bed						.1	2.6						
03							0	1.8						
J6	Gas						2.1	1.0						
JO	Bed						0	٠ .2						
17	Gas						.1	• 5						~
J7 .	Bed						0	. 4						
10	Gas						.1	3.9						
J8	Bed						.1	.7						
10	Gas						.1	2.9						
J9	Bed						.1	1.6						
	Gas						0	1.0						
T4	Coarse flyash			4.3	27.0	17.2		.9	12.8		16.8	11.2		0.6
	Fine			4.0	36.9	9.7		2.8	18.7		11.9	5.3		1.8
	flyash				50.5	3.7		, 2.0	10.7		11.5	3.3		1.0
K1	Bed						1.	.5						
	Gas						.1	4.0						
K2	Bed :						0	.4						
	Gas						.1	5.3						
К3	Bed						0	.2						
	Gas						.1	4.7						
K4	Bed						0	.i						
***	Gas						.1	4						
K5	Bed .						0.1	.7						
	Gas						ŏ	.3						
K6	Bed						0	.2						
NO.	Gas						~ . <u>-</u>							
K7	Bed						.1	3.3						
K/	Gas						.1	z.4						
K8	Bed						.2	7.4						
NO .	_						0	.1						
К9	Gas Bed						.2	2.8						
NJ	_						ο,	.4						
K10	Gas						.1	2.3						
VIO	Bed						-1	.4						
	Gas						.1	1.3						

TABLE 8. - Continued. (h)
[ASTM D-3174 and D-3175 for coal analysis.]

Test and date	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	co ₂	Fe ₂ 0 ₃	Magnesia	S03	Miscell- aneous
							Content,	wt%						•
K11	Bed						0	0.1						·
	Gas						0	.1						
K12	Bed						0	.1						
410	Gas						.1	1.4						
K13	Bed						.1	1.6						
K14	Gas						1	1.8						
K14	Bed						0	.6						
K15	Gas Bed						.1	4.0						
K13	Gas						.1 .1	.4 1.8						
K16	Bed						0.1	.4						
	Gas						.2	5.8						
T5	Coarse			1.9	31.2	28.8		.7	15.5		13.3	1.8		0.8
	flyash			•••	J L	20.0		• •	13.3		10.0	1.0		0.0
	Fine			2.0	37.9	22.2		.9	18.7		11.2	1.9		1.5
	flyash			_,0	05		•	• • •	10,,				-	
CAS1														(a)
CASO														ĭ
CAS2														1
CAS3				'										
CAS4														*
L1	Bed						0	.2						
	Gas .						.3	6.3						
L2	Bed						.1	1.3						
	Gas	,					.3	3.7						
L3	Bed						.1	.8						
	Gas						.2	1.7						
L4	Bed						0	.1						
	Gas						.2	.4						
L5	Bed						.1	.5						
	Gas						. 2	.7						
L6 .	Bed						.1	.4						
111	Gas						.2	2.7						
M1	Bed						.1	3						
uo.	Gas						.2	1.4						
M2	Bed Gae						.1	1.2						
м3	Gas						.2	1.5						
rio	Bed Gas						.2	.3						
M4	Gas Bed						•2	.4 .1						
1.1-4	Gas						.1 .2							
	uas						• 4	.2						

TABLE 8. - Concluded. (i)

[ASTM D-3174 and D-3175 for coal analysis.]

				-										
Test and	Solids source	Ash	Volatiles	Sulfur	Silica	Calcia	Hydrogen	Carbon	Alumina	C0 ₂	Fe ₂ 0 ₃	Magnesia	\$03	Miscell- aneous
date														•
							Content,	wt%						
							0.1	1 7						
M5	Bed						0.1	1.7 1.2						
	Gas						.2	.3						
M6	Bed						.1 .2	.2						
447	Gas						.1	.6						
M7	Bed						.3	.6						
MO	Gas Bed						.1	.6						
M8							.3	1.7						
M9	Gas Bed						.ĭ	.2						
כויו	Gas						.2	1.5						
M11	Bed						.1	.2						
LILL	Gas						.2	.7						
M12	Bed						.ī	.i						
1112	Gas						.2	.3						
N1	Bed													
	Gas						.2	.6						
N2	Bed						0	.1						
	Gas						.2	.6						
N5A	Bed													
	Gas													
N5B	Bed													
	Gas													
N6	Bed						.1	.7						
	Gas						.2	.5						
N55A	Bed ·													
	Gas													
N55B	Bed						 ,							
	Gas													
N7	Bed						.1	.4						
T	Gas					(-)	.2 (a)							
T6A	Bed					(a)	(0)							
TCD	Gas						ļ							
T6B	Bed					. ↓	₩							
T7	Gas				47	4			25		17	1		
T7	Bed				36	15			18		13	ī	9	
	Coarse				-30	10			10	_		•	. J.	
	flyash Fine				28	3			16		14	1	26	
	flyash				- 20	3			••			-		

		IA	BLE 9.	- RC13	TEST RESU	LTS: CC	LLECTED	SOLIDS S	IZE DIST	RIBUTIO	N (a)		
Test	Solids source						Solids	size, μm	ı				
		2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated si	ze, wt%			
A1A	Bed Gas							98.6	04.6	47.0	21 2	27.1	 19.9
A2A	Bed								84.6		31.3		
A9A	Gas Bed							99.2 	88.1	29.1	13.7	10.6	8.3
A10A	Gas Bed	94.8	73.5	50.9	28.4	19.3	12.5	6.4	3.0	 .7			
5-11-77 A11A	Gas Bed					·							
	Gas												
A1B 5-18-77	Bed Gas	97.9	77.1	48.5	20.8	11.8	6.1	1.4	.2				
A3B	Bed Gas	97.1	88.8	71.2	46.9	28.5	13.9	4.3	1.1	.6 40.6	26.3	16.8	
A5B	Bed Gas	97.3	86.0	69.9	43.5 99.9	24.8 99.9	13.3 99.5	4.0 98.1	1.3 84.1	34.9	19.8	14.9	9.6
A6B	Bed	98.5	90.2	74.9	50.0	30.0	16.7	5.0	1.6	.8			
5-19-77 A7B	Gas Bed	98.5	88.8	73.4	99.5 47.1	99.2 27.1	98.6 14.8	96.4	80.5	48.1	29.2	22.2	16.7
···.	Gas			73.4	4/.1		14.0	4.5	2.0	1.2 36.3	.9 19.0	16.5	11.0
A8B	Bed Gas	98.2	86.6	68.4	41.0 100	23.8 99.5	13.5 99.1	9.7 97.7	.7 75.6	34.9	22.7	17.1	11.7
A9B	Bed	98.9	80.1	53.3	26.0	16.9	10.3	5.5	.8	.4			
A10B	Gas Bed	91.6	81.0	58.7	99.5 31.6	99.0 20.1	98.6 13.4	95.1 5.8	76.4 2.0	30.3 .9	19.9	14.6	9.8
A11B	Gas Bed	97.9	84.4	63.9	99.8 35.8	99.0 20.7	98.0	96.8	73.0	34.8	18.9	15.3	
VIID	Gas			03.9	33.0		11.7	4.2	1.1	.8			
A12B	Bed	96.4	82.0	65.8	43.0	25.9	14.5	9.2	1.0	.8	.8		
5-20-77 A16B	Gas Bed	99.6	88.0	79.3	100 50.1	99.9 30.3	99.6 16.8	97.8 3.5	86.0 1.1	53.1 	38.3	34.7	22.1
	Gas				99.9	99.8	99.1	97.3	78.6	44.3	37.0	11.8	
A17B	Bed Gas	97.3	85.9 	71.4	49.4	28.9 99.5	14.9 99.2	5.0 97.7	2.9 81.0	2.8 55.5	2.7 29.7	22.9	19.1
C1	Bed												19.1
^^	Gas				99.7	99.2	98.4	91.9	74.2	39.9	16.9	15.9	14.7
C3	Bed Gas	97.9	82.6	63.1	37.6 99.8	21.9 99.5	11.8 98.9	2.9 93.2	.9 72.0	39.1	21.5	19.1	17.0
C8	Bed	96.8	80.4	62.4	37.9	20.8	11.1	2.3	.3				
6-3-77	Gas	07.2			99.1	98.6	98.3	96.3	80.6	48.3	34.3	24.9	16.8
C11	Bed Gas	97.3	84.8	69.9	46.2 99.6	28.0 99.4	15.5 99.2	3.6 97.9	1.0 82.2	47.8	33.0	25.8	16.4
C12	Bed	96.9	81.5	65.3	42.0	24.6	13.4	3.3	1.1				
C16	Gas Bed	97.1	89.1	69.4	99.9 46.2	99.8 27.9	99.3 15.4	94.4 3.3	64.6	20.5	17.6	13.4	9.8
010	Gas				99.8	99.5	98.9	95.6	1.4 76.6	38.2	20.5	18.3	15.9

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TABLE 9. - Continued. (b)

					• • • • • • • • • • • • • • • • • • • •		0011011110	(6)					
Test	Solids source						Solids	size, μπ	1				
		2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated s	ze, wt%			
C17	Bed Gas	97.2	86.2	72.4	50.3	26.2	12.1	1.7 95.2	0.4 78.6	.2 53.6	31.6	 27.7	
D1	Bed								70.0		31.0		
7-26-77	Gas							98.5	89.9	58.6	38.8	30.5	22.9
D2	Bed												
	Gas							92.9	76.3	45.4	30.4	23.9	18.1
D3	Bed												
7-27-77	Gas							94.3	75.1	41.3	34.2	27.0	19.3
D4	Bed												
0.6	Gas												
D6	Bed												
הס	Gas							96.0	79.1	46.3	21.3		
D7	Bed												
D10	Gas							91.1	73.8	44.9	30.9	25.7	21.1
DIO	Bed							06.0	76.6	46.1		-	
B1A	Gas Bed	98.4	80.8	61.3	40.2	24.0	14 2	96.3	76.6	46.1	21.1	18.0	15.3
5-25-77	Gas				40.3	24.9	14.3	5.7	2.7	1.6	1.3	26. 2	
TB1B	Bed							98.7			93.7	39.3	4.1
5-26-77	Gas										01.6	20.1	
TB1C	Bed										81.6	38.1	3.5
5-27-77	Gas										94.0	17.4	
TB1D	Bed	98.6	85.6	68.1	43.3	21.4	8.3	2.7	2.1				
6-9-77	Gas							99.3	88.2	74.2	46.1		
TB1E	Bed										~		
6-10-77	Gas						·	97.0	87.2	70.2	40.3		
TB1F	Bed												
6-10-77	Gas							98.8	92.6	57.0	46.1		
TB1G	Bed												
6-16-77	Gas							97.7			90.4	40.8	3.8
TB1H	Bed												
7-14-77	Gas												
TB2A	Bed												
8-4-77	Gas												
TB2B	Bed												
8-11-77	Gas												
TB2C	Bed												
8-12-77	Gas												
TB2D	Bed												
8-16-77	Gas												
TB2E 8-17-77	Bed Cac												
8-17-77 TB2F	Gas Bed												
8-31-77	Gas												
TB2G	Bed												
8-31-77	Gas												
3-01-11	Jus												

Os

TABLE 9. - Continued. (c)

Test	Solids						Solids	size, μm					
	source	2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated si	ze, wt%			
E1	Bed Gas												
E2	Bed												
E3	Gas Bed												
E4 .	Gas Bed				99.40 	99.0	98.2	91.9 					
E5	Gas Bed				96.1 	88.2	74.50	47.90	31.50	6.2	1.30		
E6	Gas Bed				99.40	98.2	94.6	79.10	40.0				
E9	Gas Bed				99.7	99.5	98.8	92.9					
E11	Gas				99.20	98.75	97.8	92.2					
	Bed Gas												
E12	Bed Gas												
E13	Bed Gas												
E14	Bed Gas												
E15	Bed Gas												
E17	Bed	99.5	89.3	67.8	32.2	10.9	3.7						
F1	Gas 	(a)	(a)										
F2 F3													
F4 F5													
F6 F7													
F8 F9	Bed	↓ ·	ļ										
	Gas				97.6	95.0	90.0	77.1	57.1				
F16 F19		(a) (a)	(a) (a)										
F27 G1	Bed	(a)	(a)										
G2	Gas Bed				99.6	99.4	99.1	95.1	76.0				
	Gas				98.8	98.1	96.8	88.9	71.7		,		

TABLE 9. - Continued. (d)

Test	Solids						Solids s	size, μm	ł				
	source	2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated si	ze, wt%			
G3	Bed												
45	Gas				99.7	99.5	99.3	97.2	83.8				
G5	Bed												
G6	Gas				98.5	97.2	94.5	85.8					
uo	Bed Gas				99.9	99.9	99.9	99.2	88.8				
G7	Bed												
	Gas				99.7	99.5	99.2	96.1					
G8	Bed				99.5	99.1	98.2	93.7					
G9	Gas Bed				99.5	99.1	90.2						
. 09	Gas				99.4	99.3	99.1	95.5	81.8				
G10	Bed												
	Gas			99.6	99.5	99.2	98.6	94.3	74.9	53.5	38.9	11.4	2.30
G11	Bed												
010	Gas				96.2	94.7	92.4	84.3	67.3				
G12	Bed Gas				99.9	99.7	98.9	90.4					
G13	Bed												
	Gas				99.2	99.0	98.4	95.2	74.3				
G14	Bed												
	Gas				99.9	99.8	99.6	96.3					
G15	Bed				99.7	00.6	99.2	94.6	75.6				
G16	Gas Bed				99./	99.6	33.2	54.0 	75.0				
GIU	Gas				99.7	99.5	99.1	95.1	80.8				
G17	Bed												
	Gas				99.8	99.7	99.4	96.7					
G18	Bed .												
010	Gas				98.6	97.5	95.0	90.4	73.7				
G19	Bed Gas				99.8	99.6	98.1	90.2	77.6				
G22	Bed												
022	Gas				99.9	99.9	99.8	97.8					
G23	Bed												
	Gas				99.8	99.7	99.4	96.8					
G24	Bed				97.3	96.0	94.0	89.0	76.8				
T3A-1	Gas Bed				97.3	90.0	94.U 		70.0				
134-1	Gas							91.2	73.4	69.5	67.2		
T3A-2	Bed												
	Gas							96.9	88.6	85.0	82.2	61.0	26.5
T3A-3	Bed			76.5	42.0	17.5	4.8	.4		05.2	01 5	46.2	10.5
TOP	Gas	05.2	75 1	E2 E	32.5	18.2	9.5	2.7	88.8	85.2 	81.5	49.2	19.5
T3B	Bed Gas	95.2	75.1 	53.5	32.5	10.2	9.5						
	-43												

TABLE 9. - Continued. (e)

						••		(0)					
Test	Solids source						Solids	size, μm					
		2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated si	ze, wt%			
T3C	Bed												
	Gas												
T3D	Bed												
***	Gas												
T3E	Bed												
Tor	Gas												
T3F	Bed												
Н1	Gas Bed												
111	Gas				99.4	99.1	98.5	95.1	78.8	52.9	50.6	19.5	
H2	Bed												
	Gas					. =====		98.6	83.5	66.0	55.7	16.2	
Н3	Bed												
	Gas				99.7	99.6	98.7	93.1	74.0	47.9	44.0	7.6	
H4	Bed							- 					
•	Gas				99.7	99.3	98.2	92.7	74.7	51.7	48.0	9.5	
H5 -	Bed												
	Gas				98.4	97.9	96.9	84.4	69.7	51.2	48.9	2.7	
Н6	Bed												
	Gas				99.7	98.7	97.5	91.1	79.6	54.9	53.3	9.0	
Н7	Bed							01.7	36.6	51.6	46.7		
Н9	Gas				99.3	98.3	96.8	91.7	76.6	51.6	46.7	8.8	
пэ	Bed Gas				99.7	98.7	98.1	95.6	84.8	57.3	50.2	10.5	
H10	Bed					50.7	50.1	33.0		57.5	30.2		
1120	Gas				99.8	99.2	97.7	93.6	80.8	51.8	46.8		
Н11	Bed												
	Gas				99.8	99.3	98.3	94.8	82.4	50.9	47.4		
H13	Bed	96.1	72.7	53.5	33.5	15.5	3.7	.7					
	Gas				99.6	98.0	97.7	95.5	76.2	54.6	52.5	28.7	
H14	Bed												
	Gas				98.0	96.5	94.5	89.7	77.7	58.2	53.4		
H19	Bed												
	Gas				99.4	99.1	96.3	89.5	68.8	50.5	41.4		
H20	Bed												
	Gas				98.9	94.0	84.1	66.3	53.1	44.5	42.4		
H23	Bed	98.8	89.9	80.5	63.5	42.5	20.9	2.5	49.2	37.3	32.7		
UOA	Gas				98.8	94.8	88.2	67.4					
H24	Bed Gas				98.6	96.0	91.0	73.7	56.5	45.2	42.0		
Н25	Bed												
1123	Gas				98.7	96.3	93.5	79.5	65.7	53.5	47.3		
15	Bed												
	Gas												
16	Bed												
	Gac												

TABLE 9. - Continued. (f)

Test	Solids						Solids	size, μm					
	source	2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solids	smalle	r than s	tated si	ze, wt%			
17	Bed												
	Gas												
18	Bed												
	Gas												
19	Bed											-	
I10	Gas Bed												
110	Gas												
I 11	Bed	98.3	92.0	84.0	71.2	50.6	29.5	5.7					
- .	Gas												
112	Bed												
	Gas												
113	Bed												
10	Gas												
J3	Bed				02.2	84.2	73.5	40.0	28.0	17.7	143.9	7.4	3.2
J5	Gas Bed				92.3		/3.5	48.0	20.0		143.9	7.4	
03	Gas				92.8	85.5	75.0	46.5	22.2	18.0	13.7	3.8	1.2
J6	Bed												
	Gas				96.3	90.5	82.5	63.6	51.0	35.5	27.7	6.2	2.3
T4	Bed	97.9	91.1	79.5	65.2	46.5	33.1	9.5					
_	Gas				99.8			97.5	94.9	89.2	68.4	32.0	14.3
K1	Bed												
**	Gas				99.5	99.1	98.5	97.0	83.5	64.0	49.7	21.0	8.3
T5	Bed							00.2	98.0	94.1	91.2	51.0	23.5
CAS1	Gas Bed							99.3	90.0	94.1	91.2	51.0	
CH3I	Gas						96.1	93.1	83.9	74.5	70.3	52.4	25.5
CASO-1	Bed												
0-18-79	Gas				99.1	97.5	97.1	96.3	92.3	87.5	83.2	51.0	21.2
CASO-2	Bed									"			
1-19-79	Gas				99.1			98.8	97.3	9.20	83.5	51.5	19.5
CASO-3	Bed												17.6
1-19-79	Gas				98.5	97.6	96.0	91.0	85.7	74.2	63.5	42.5	17.5
CASO-4 1-19-79	Bed							97.5	94.5	91.5	72.5	35.2	17.5
CAS2-1	Gas Bed							97.5	34.5	31.3	72.5	33.2	17.5
10-30-79	Gas				89.0	84.5	80.0	71.0	33.0	18.0	13.5		
CAS2-3	Bed												
1-31-79	Gas							95.4	91.7	88.1	85.6	·	
CAS2-4	Bed												
1-31-79	Gas				93.4	89.4	85.2	82.2	71.7	55.5	45.0	22.0	9.5
CAS3-2	Bed .												
2-14-79	Gas					96.2		92.1	84.5	80.5	60.0	34.5	13.5
CAS3-4	Bed							02.6	87.5	70.5	61 5	37.5	14.2
2-15-79	Gas							92.6	0/.5	70.5	61.5	3/.3	14.2

TABLE 9. - Concluded. (g)

								107					
Test	Solids source						Solids	size, μm				•	
	Source	2000	1410	1000	707	500	354	177	74	37	25	10	5
					Amount	of solid	s smalle	r than s	tated si	ze, wt%			
CAS4-2	Bed												
2-22-79	Gas				-			97.5	94.5	91.5	62.5	39.5	18.8
L1	Bed								05.1			25 5	1
L2	Gas				98.8	98.1	97.6	97.0	95.1	88.3	80.6	35.5	16.5
4.2	Bed Gas				98.6	97.6	96.6	95.1	63.5	40.2	23.2	16.7	
L3	Bed												
	Gas				98.7	97.5	96.2	94.5	55.5	29.2	19.5		
L4	Bed			98.2	91.0	81.0	78.0	75.5	54.5				
	Gas				98.5	97.6	96.5	94.5	78.2	34.5	21.0		
L5	Bed			82.5	68.2	52.0	41.0	24.5	13.8				
	Gas				98.5	97.0	95.0	92.0	87.5	86.5	83.5	28.2	14.5
L6	Bed												
	Gas				98.7	97.6	96.6	94.5	92.2	78.5	30.2	17.5	
M1 .	Bed										70.0	40.5	17.5
W4	Gas				99.4	99.1	98.7	97.7	903.4	88.0	79.2	40.5	17.5
M4	Bed	·			99.7	98.6	98.0	95.8	92.7	85.5	78.6	35.5	14.5
M5	Gas Bed			82.0	72.5	56.5	42.5	32.5	18.2		70.0		14.5
MS	Gas			02.0	98.6	98.5	98.0	95.3	90.0	83.5	79.2	37.5	15.5
M12	Bed												
1122	Gas				71.0	56.5	46.0	33.0	23.5	15.5	11.0	2.8	.8
Т6	Bed			(a)	(a)								
	Gas												
N5A	Bed			87.5	76.2	55.2	38.2	26.5	18.2				
	Gas												
N5B	Bed												
	Gas				98.6	97.6	94.8	86.2	55.5	16.5	5.0		
N6	Bed					07.0	07.5	06.0	01.5	20.0	_ 	1 4 5	
N55A	Gas				98.8	97.8	97.5	96.2	81.5	30.0	25.5	14.5	
NOON	Bed Gas				99.4	98.6	97.5	96.0	91.5	74.2	51.0	32.5	
N55B	Bed												
11330	Gas				98.5	97.5	96.4	94.6	90.2	83.2	70.0		
N7	Bed												
,	Gas			99.4	98.6	97.5	96.4	95.0	87.2	56.2	21.0	10.5	
T7 .	Bed			(a)	(a)								
	Gas												

TABLE 10. - PFB COMBUSTION BED DISCHARGE ANALYSIS

Test and date			Particle si	ze range, μπ	1
		<590	590 - 840	840 - 1410	>1410
A10A 5/11/77	Amount in size range, percent Silica content, percent Lime content, percent Sulfur content, percent Carbon dioxide content, percent Ignition loss, percent	22.8 6.9 55.9 9.8 .9 4.0	13.7 3.2 64.6 10.2 .7 3.3	36.5 3.4 66.9 8.8 .6 2.8	26.5 4.1 71.8 6.0 .2 3.8
A108 5/19/77	Amount in size range, percent Silica content, percent Lime content, percent Sulfur content, percent Carbon dioxide content, percent Ignition loss, percent	24.1 8.3 54.2 8.6 2.9 6.2	17.9 4.4 63.5 9.2 .7 5.6	39.0 4.6 65.1 8.2 .9 5.0	19.0 4.1 71.7 6.4 .6 3.4
C3 6/27/77	Amount in size range, percent Silica content, percent Lime content, percent Sulfur content, percent Carbon dioxide content, percent Ignition loss, percent	27.6 10.2 49.9 9.2 .1 2.7	22.3 4.8 65.2 8.5 1.6 3.5	32.5 3.7 68.4 5.6 2.4 4.3	17.4 3.8 73.5 3.9 5.1 7.2

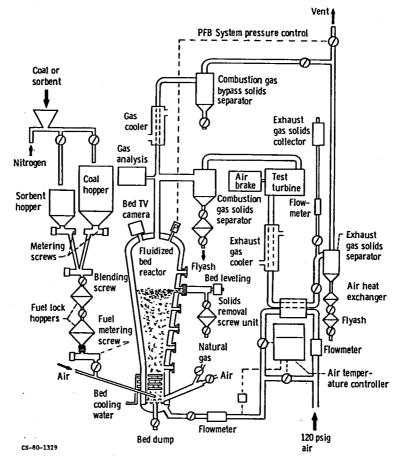


Figure 1. - Schematic of Lewis PFB combustor system.

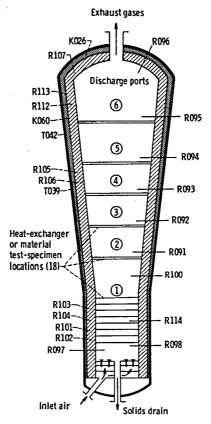


Figure 2. - PFB reactor temperature instrumentation.

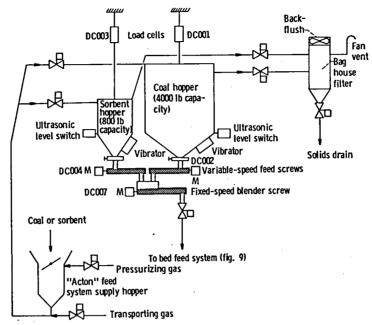


Figure 3. - PFB fuel supply system.

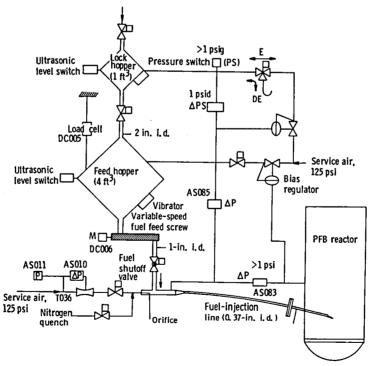


Figure 4. - PFB bed feed system.

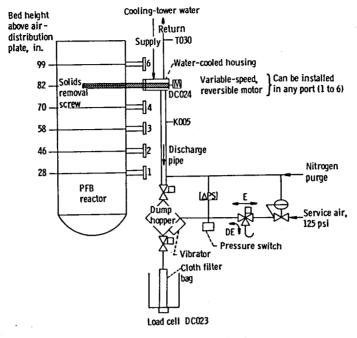


Figure 5. - PFB solids removal system.

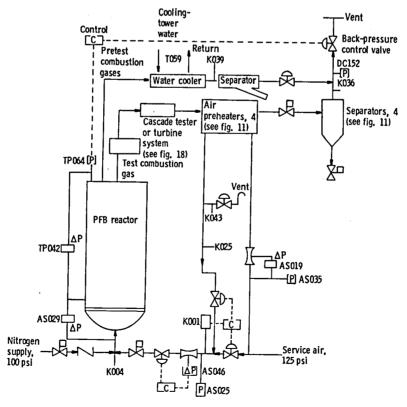


Figure 6. - PFB combustion air system.

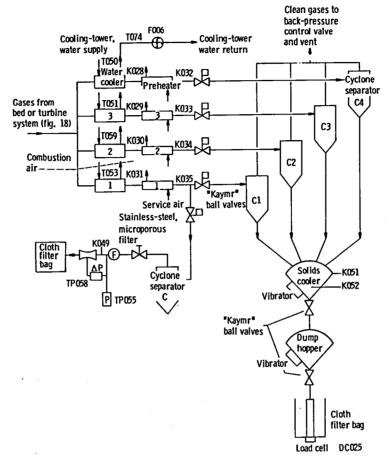


Figure 7. - PFB exhaust system.

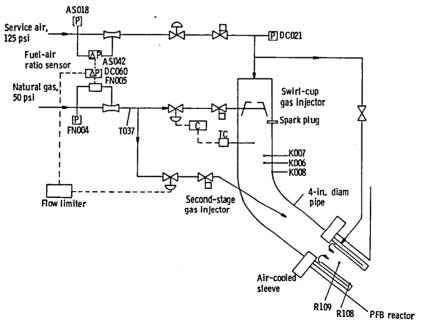


Figure 8. - PFB preheater burner.

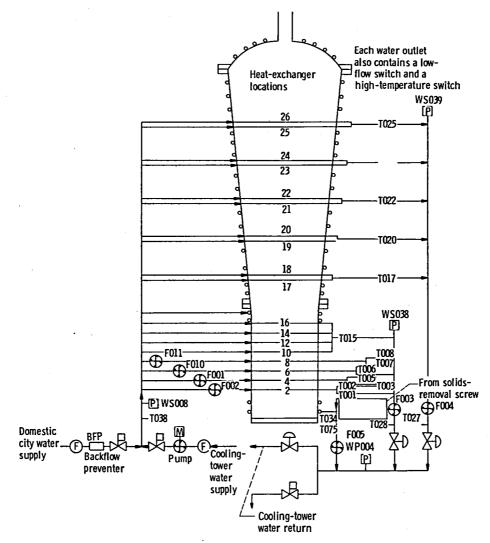


Figure 9. - PFB reactor water cooling system.

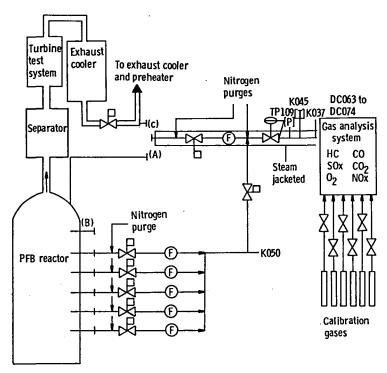


Figure 10. - PFB gas analysis system.

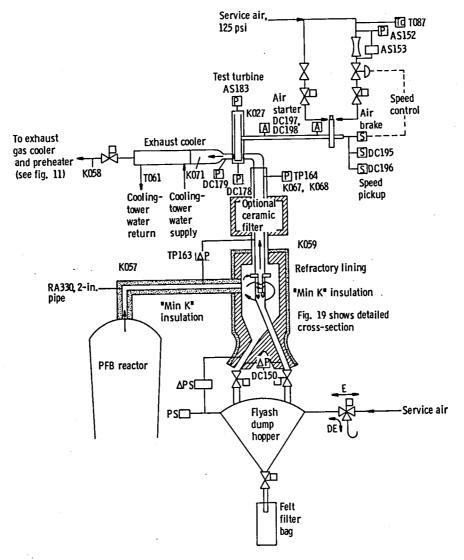


Figure 11. - Turbine test section and hot gas cleanup system.

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 Performing Organization Name and Addr National Aeronautics and Sp Lewis Research Center Cleveland, Ohio 44135 Sponsoring Agency Name and Address National Aeronautics and Sp Washington, D.C. 20546 	pace Administration	11. Contract or Grant No. 13. Type of Report and Period Covered Technical Memorandum 14. Sponsoring Agency Code
15. Supplementary Notes		
facility were designed, confacility was intended for the be used in powerplant turbed operated over a range of professure of combustion extermine the relationships to systems and to check out he formance and how various the PFB environment. The were used to obtain the test procedures and test variations.	e evaluation of advanced a person of advanced a person of advanced a person of fuel, it arameters: type of fuel, it arameters: type of fuel, it arameters: and combusting the fuel and combusting the fuel and combusting parameters on the physical materials were affected de instrumentation and continue tresults. The various follows are presented. NASA	the NASA Lewis Research Center. The circular turbine engine materials that might combustors. The facility reactor could be type of sulfur sorbent material, percentage on air, reactor bed depth, temperature and ton operating time. Tests were made to demeters and the reactor and gas cleanup I configuration of the system affected perturing long-time, steady-state exposure to crol data are presented along with how they remulas used are also given. The operating has terminated its PFB work, but many of the or commercial development of PFB
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AICROFICHE SUPPLEMENT TO NASA TM-81767
TABLE 4. - PFB TEST RESULTS

TABLE 4. - PFB TEST RESULTS

FOLDOUT FRAME

(a) Combustor input solids data

Data chan-	Parameter					Test				
nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	278 65 (a) 27 8	55 (a) 73	0 51	52 (a) 31	? 67 (a) 16	25 (a) 24	49 (a) 29	127 43 (a) 20 10	124 37 (a) (b) 2
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 368 18	(a) 319 16	(a) 303 17	(a) 341 18	134	(a) 158 15	Ì35	(a) 168 15	(a) 171 15
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	0 (b)	1 (b)	1 (b)		1 (b)	4 (b)	1 (b)	1 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) 62	(b) 67	(b) 69	(b) 56	(b) 61	(b) 85	(b) 84	(b) 69	(b) 66
022 022	Standard deviation Fuel line pressure differential, psid	(b)	3 (b)	5 (b)	2 (b)	3 (b)	2 (b)	4 (b)	1 (b)	1 (b)
022 033	Standard deviation Fuel injector differential pressure, psid	(b) 10.8	(b) 9.9	(b) 10.0	(b) 11.5	(b) 10.8	(b) 14.3	(b) 14.4	(b) 13.0	(b) 14.3
033 092	Standard deviation Present fuel flow, lb/hr	0.1 (b)	0.5 (b)	0.4 (b)	0.7 (b)	0.5 (b)	0.3 (b)	1.0 (b)	0.6 (b)	0.2 (b)
092 093 093 094 094 095 095 100 100 174	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	(b) (b) (b) (b) (b) (b) (b) (b) 54.2	(b) (b) (b) (b) (b) (b) (b) (b) 34.1	(b) (b) (b) (b) (b) (b) (b) (b) 44.8	(b) (b) (b) (b) (b) (b) (b) 39.9	(b) (b) (b) (b) (b) (b) (b) (b) 44.0	(b) (b) (b) (b) (b) (b) (b) (b) 41.0	(b) (b) (b) (b) (b) (b) (b) (b) 38.1	(b) (b) (b) (b) (b) (b) (b) 44.5	(b) (b) (b) (b) (b) (b) (b) 49.5
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	10.9 1000 (a) 45.3	17.2 1121 (a) 43.7	8.5 1102 (a) 41.2	11.7 912 (a) 45.3	8.2 1105 (a) 43.8	6.5 1315 (a) 43.5	14.8 1025 (a) 42.0	4.8 874 (a) 39.3	15.5 1272 (a) 43.6
176 177	Standard deviation Accumulated fuel flow, 1b	2.7 316	14.1 699	4.2 432	3.9 392	1.6 662	1.3 122	1.6 294	7.2 516	1.8 701
177 298	Standard deviation Present fuel flow, lb/hr	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)
298 C06 C06 C07	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr.	(b) 0.17 0 46.3	(b) 0.16 0 29.4	(b) 0.15 0	(b) 0.15 0	(b) 0.13 0	(b) 0.13 0	(b) 0.13 0	Λ	(b) 0.20 0

	lb/hr			TITE	40.0	43.0	43.5	46.0	***39**3*	45.0
176	Standard deviation Accumulated fuel flow, lb	2.7	14.1	4.2	3.9	1.6	1.3	1.6	7.2	1.8
177		316	699	432	392	662	122	294	516	701
177	Standard deviation Present fuel flow, lb/hr	(a)	(a)							
298		(b)	(b)							
298	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate, lb/hr	(b)	(b)							
C06		0.17	0.16	0.15	0.15	0.13	0.13	0.13	0.15	0.20
C06		0	0	0	0	0	0	0	0	0
C07		46.3	29.4	38.8	34.7	38.9	36.2	33.6	38.7	41.1
C07		9.3	14.8	7.4	10.2	7.3	5.8	13.1	4.2	12.9
C08		8.0	4.7	6.0	5.2	5.1	4.7	4.4	5.8	8.4
C08	Standard deviation Fuel flow rate, lb/hr Standard deviation Input calcium-sulfur ratio	1.6	2.4	1.1	1.5	1.0	0.8	1.7	0.6	2.6
C05		54.2	34.1	44.8	39.9	44.0	40.9	38.1	44.5	49.5
C05		10.9	17.2	8.5	11.7	8.2	6.5	14.8	4.8	15.5
C13		2.68	2.48	2.40	2.34	2.04	2.04	2.06	2.35	3.16
C13	Standard deviation	0	0	0	0	0	0	0	0	0

 $^{\mbox{\scriptsize a}}_{\mbox{\scriptsize D}}$ the data or results obtained are obviously in error. $^{\mbox{\scriptsize b}}_{\mbox{\scriptsize D}}$ ata or results were not obtained.

FOLDOUT FRAME 2

بنيعه

FOLDOUT FRAME

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

Data	Parameter				T	est			
chan- nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
001	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	118	234	79	100	101	109	98	31
002		25	30	33	17	43	25	13	(b)
002		(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
003		12	41	6	7	9	11	(a)	13
004		4	4	5	2	6	4	2	(a)
004	Standard deviation Fuel consumed, lb Fuel meter screw value	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(b)
005		166	245	105	78	158	138	116	85
006		14	17	13	11	16	17	9	19
006 014	Standard deviation Fuel injector differ- ential pressure, psid	0 (b)	4 (b)	1 (b)	1 (b)	(b)	1 (b)	1 (b)	(p)
014	Standard deviation Fuel injector line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
022		74	82	74	68	66	69	83	86
022	Standard deviation Fuel injector differential pressure, psid	5	3	3	1	1	4	4	1
033		13.4	10.3	10.8	11.3	11.6	12.2	10.5	8.6
033	Standard deviation Present fuel flow, lb/hr	0.5	1.2	0	0.1	0.1	0.4	0.3	0.1
092		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) (b) 45.9	(b) (b) (b) (b) (b) (b) (b) (b) 43.0	(b) (b) (b) (b) (b) (b) (b) (b) 140.2	(b) (b) (b) (b) (b) (b) (b) (b) 48.1	(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) (b) 36.5	(b) (b) (b) (b) (b) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	5.9 1195 (a) 41.9	7.9 1106 (a) 44.8	8.6 1062 (a) 40.4	1452 (a)	14.2 777 (a) 41.1	4.9 1138 (a) 48.7	9.0 948 (a) 34.4	13.6 1336 (a) 57.7
176	<pre>1b/hr Standard deviation Accumulated fuel flow, 1b</pre>	1.6	4.9	2.7	12.8	6.1	3.2	4.0	16.2
177		871	252	304	410	558	741	903	165
177	Standard deviation Present fuel flow, lb/hr	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
298		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298 C06 C06 C07	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr	(b) 0.09 0 40.5 5.4		0 37.9			0 42.7	0.14	(b) 0.14 0 45.2 12.0

174	Scandard deviation	4405	1100	1000	1450		TANA		1 2 2 6
175	Fuel flow time, sec	1195	1106	1062	1452	777	1138	948	1336
175	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
176	Previous fuel flow,	41.9	44.8	40.4	32.9	41.1	48.7	34.4	57.7
_, _	1b/hr								
176	Standard deviation	1.6	4.9	2.7	12.8	6.1	3.2	4.0	16.2
177	Accumulated fuel flow,	871	252	304	410	558	741	903	165
	1b								
177	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
298	Present fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	lb/hr	` '	, ,	• •	, ,	• •			
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C06	Sorbent-coal ratio	0.09	0.14	0.14	0.14	0.14	0.14	0.14	0.14
C06	Standard deviation	0	0	0	0	0	0	0	0
C07	Coal flow rate, lb/hr	40.5	40.4	37.9	123.4	42.4	42.7	32.1	45.2
C07	Standard deviation	5.4	7.0	7.6	199.5	12.5	4.3	8.0	12.0
C08	Sorbent flow rate,	3.6	5.5	5.1	16.8	5.8	5.9	4.4	6.2
000	1b/hr								
C08	Standard deviation	0.5	1.0	1.0	27.1	1.7	0.6	1.1	1.6
C05	Fuel flow rate, lb/hr	44.1	45.9	43.0	140.2	48.1	48.7	36.5	51.4
C05	Standard deviation	5.9	7.9	8.6	226.7	14.2	4.9	9.0	13.6
C13	Input calcium-sulfur	1.39	2.12	2.12	2.12	2.12	2.17	2.12	2.12
010	ratio								
C13	Standard deviation	0	0	0	0	0	0	0	0
OTO	Juanaula actianion	U	•	_	•	•	_		

 $^{\mbox{\scriptsize a}}\mbox{The data or results obtained are obviously in error.$ $<math display="inline">^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

FOLDOUT FRAME

2

FOLDOUT FRAME /

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(4.7							
Data	Parameter				Test			
chan- nel		C1	C3	C8	C11	C12	C16	C17
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	132 43 (a) 23 11	122 49 (a) 10 6	88 (b) (a) 11 (b)	117 25 (a) 15 14	(a) 49 (a) 17 14	113 28 (a) 8 14	128 82 (a) (a) 14
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a) 142 18	(a) 137 19	(b) 86 18	(a) 147 21	0 122 13	0 139 20	0 125 23
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	0 (b)	0 (b)	(b)	2 (b)	(b)	1 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) 63	(b) 60	(b) 57	(b) 53	(b) 63	(b) 71	(b) 73
022 033	Standard deviation Fuel injector differential pressure, psid	1 11.3	0 11.7	2 11.0	1 11.7	3 11.7	1 11.6	0 10.2
033 092	Standard deviation Present fuel flow, lb/hr	0.4 (b)	(b)	0.6 (b)	0.2 (b)	0.1 (b)	0.8 (b)	0.1 (b)
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	(b) (b) (b) (b) (b) (b) (b) (b) 37.9	(b) (b) (b) (b) (b) (b) (b) (b)		(b) (b) (b) (b) (b) (b) (b) (b) 53.7	(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) (b) 41.9	(b) (b) (b) (b) (b) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	8.3 950 (a) 39.8	18.5 840 (a) 47.7	5.4 1165 (a) 41.7	18.3 1206 (a) 37.7	9.6 991 (a) 38.5	3.8 1263 (a) 40.8	6.6 604 (a) 44.3
176 177	lb/hr Standard deviation Accumulated fuel flow,	7.5 848	16.1 297	4.6 182	7.2 397	7.7 567	3.1 697	7.3 845
177 298	<pre>1b Standard deviation Present fuel flow, 1b/hr</pre>	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)
298 C06 C06 C07 C07 C08	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate,	(b) 0.14 0 33.2 7.2 4.7	(b) 0.15 0 40.5 16.1 6.2	(b) 0.08 0 36.8 5.0 2.9	0.20	(b) 0.19 0 33.7 8.0 6.4	(b) 0.20 0 35.1 3.2 6.9	(b) 0.09 0 37.9 6.1 3.3

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174	Standard deviation	8.3	18.5	5.4	18.3	9.6	3.8	6.6
175	Fuel flow time, sec	950	840	1165	1206	991	1263	604
175	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	
176	Previous fuel flow,	39.8	47.7	41.7	37.7	38.5	40.8	(a)
	1b/hr	03.0	77.7	71.7	37.7	30.5	40.0	44.3
176	Standard deviation	7.5	16.1	4.6	7.2	7.7	3.1	7.3
177	Accumulated fuel flow,	848	297	182	397	567	697	845
	1b	0.0		102	057	307	057	040
177	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)
298	Present fuel flow,	(b)	(\tilde{b})	(\tilde{b})	(b)	(b)	(b)	(b)
	lb/hr	(~)	(2)	(5)	(5)	(5)	(0)	(0)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C06	Sorbent-coal ratio	0.14	0.15	0.08	0.20	0.19	0.20	0.09
C06	Standard deviation	0	0	0	0	0.13	0.20	0.09
C07	Coal flow rate, 1b/hr	33.2	40.5	36.8	44.7	33.7	35.1	37 . 9
C07	Standard deviation	7.2	16.1	5.0	15.3	8.0	3.2	
C08	Sorbent flow rate.	4.7	6.2	2.9	8.9	6.4		6.1
	1b/hr	7.7	0.2	2.3	0.9	0.4	6.9	3.3
C08	Standard deviation	1.0	2.5	0.4	3.1	1.5	0.6	0.5
C05	Fuel flow rate, lb/hr	37.9	46.7	39.7	53.7	40.2	41.9	41.2
C 05	Standard deviation	8.3	18.5	5.4	18.3	9.6	3.8	6.6
C13	Input calcium-sulfur	2.23	2.39	1.22	3.12	2.98	3.07	
	ratio	20	2.05	1.22	3.12	2.30	3.07	1.36
C13	Standard deviation	0	0	0	0	0	0	0
		U	U	U	U	U	U	0

 $^{\text{a}}\!\!\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\!\!\text{Data}$ or results were not obtained.

FOLDOUT FRAME 2

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(a) continued ce	וטט בטטוווע	ιπρα	C 50111	us uat	a		
Data chan-	Parameter				Test	;		
nel		D6	D7	D2	D1	D10	D3	D4
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	224 96 0 17 12	191 96 0 20 12	144 96 0 11 12	105 96 0 4 12	138 96 0 (b) 12	217 96 0 5 12	159 96 0 53 12
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	0 257 20	0 217 19	0 161 18	0 111 13	0 156 10	0 254 21	0 191 19
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	(b)	1 (b)	1 (b)	(p)	2 (b)	4 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) 75	(b) 72	(b) 77	(b) 74	(b) 68	(b) 72	(b) 82
022 033	Standard deviation Fuel injector differ- ential pressure, psid	2 2.77	1 2.35	1 1.45	2 1.80	3.31	6 2.71	1 2.65
033 092	Standard deviation Present fuel flow, lb/hr	0.18 (b)	0.24 (b)	0.11 (b)	0.45 (b)	0.43 (b)	0.23 (b)	0.20 (b)
092 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	(b) (b) (b) (b) (b) (b) (b) 45.5	(b) (b) (b) (b) (b) (b) (b) (b) 37.1	(b) (b) (b) (b) (b) (b) (b) (b) 26.3	(b) (b) (b) (b) (b) (b) (b) (c) 29.1	(b) (b) (b) (b) (b) (b) (b) (b) 25.1	(b) (b) (b) (b) (b) (b) (b) 45.8	(b) (b) (b) (b) (b) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	8.5 865 (a) 43.1	4.2 1112 (a) 37.9	8.5 695 (a) 32.3	3.1 1636 (a) 30.1	2.7 1694 (a) 26.4	8.9 823 (a) 43.1	7.6 1151 (a) 35.1
176 177	Standard deviation Accumulated fuel flow, lb	4.0 174	3.0 416	11.7 578	2.6 909	1.6 206	7.0 296	9.4 546
177 298	Standard deviation Present fuel flow, lb/hr	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)
298 C06 C06 C07 C07 C08	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate,	(b) 0.14 0 40.1 7.5 5.5	(b) 0.14 0 32.7 3.7 4.4	(b) 0.13 0 23.4 7.6 2.9	(b) 0.11 0 26.2 2.8 3.0	(b) 0.13 0 22.2 2.4 2.8	(b) 0.12 0 40.9 8.0 4.9	(b) 0.12 0 33.4 6.8 4.0
C08	lb/hr Standard deviation	1.0	0.5	0.9	0.3	0.3	1.0	0.8

095	Standard deviation	(b)						
100	Fuel flow indicated value	(b)	(b)	(b)	(b)	ÌЬ́)	(b)	(b)
100	Standard deviation	(b)						
174	Present fuel flow, lb/hr	45.5	37.1	26.3	29.1	25.1	45.8	37.4
174	Standard deviation	8.5	4.2	8.5	3.1	2.7	8.9	7.6
175	Fuel flow time, sec	865	1112	695	1636	1694	823	1151
175	Standard deviation	(a)						
176	Previous fuel flow, lb/hr	43.1	37.9	32.3	30.1	26.4	43.1	35.1
176	Standard deviation	4.0	3.0	11.7	2.6	1.6	7.0	9.4
177	Accumulated fuel flow, lb	174	416	578	909	206	296	546
177	Standard deviation	(a)						
298	Present fuel flow, lb/hr	(b)						
298	Standard deviation	(b)						
C06	Sorbent-coal ratio	0.14	0.14	0.13	0.11	0.13	0.12	0.12
C06	Standard deviation	0	0	0	0	0	0	0
C07	Coal flow rate, 1b/hr	40.1	32.7	23.4	26.2	22.2	40.9	33.4
C07	Standard deviation	7.5	3.7	7.6	2.8	2.4	8.0	6.8
C08	Sorbent flow rate, lb/hr	5.5	4.4	2.9	3.0	2.8	4.9	4.0
C08	Standard deviation	1.0	0.5	0.9	0.3	0.3	1.0	0.8
C05	Fuel flow rate, lb/hr	45.5	37.1	26.3	29.1	25.0	45.8	37.4
C05	Standard deviation	8.5	4.2	8.5	3.1	2.7	8.9	7.6
C13	Input calcium-sulfur ratio	2.14	2.12	1.95	1.76	2.00	1.87	1.87
C13	Standard deviation	0	0	0	0	0	0	0

TABLE 4. - Continued.

	(a) continued: -	COMBUS		par so	,,				
Data	Parameter				Te	st			
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	TB1H
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw	92 7 0 6 6	297 16 (a) 18 4	(a) 47 (a) 69 3	582 56 (a) 80 6	418 68 (a) 64 8	(a) 40 (a) 114 5	1610 44 (a) 181 6	1530 47 (a) 64 7
004 005 006	value Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 99 15	(a) 311 14	(a) 849 14	(a) 645 23	(a) 468 21	(a) 808 21	(a) 1950 20	(a) 1700 20
006 014	Standard deviation Fuel injector differ- ential pressure,	(p)	(b)	1 (b)	1 (b)	(p)	1 (b)	2 (b)	6 (b)
014 022	psid Standard deviation Fuel injector line	(b) 75	(b) 73	(b) 74	(b) 67	(b) 64	(b) 67	(b) 75	(b) 84
022 033	temperature, °F Standard deviation Fuel injector differ- ential pressure, psid	12.1	1 11.6	5 10.8	9.3	3 9.6	6 11.6	6 16.1	6 15.8
033 092	Standard deviation Present fuel flow,	0.4 (b)	0.5 (b)	0.5 (b)	0.4 (b)	0.3 (b)	0.6 (b)	1.1 (b)	1.5 (b)
092 093 093 094 094 095 095 100 100	lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow,	(b) (b) (b) (b) (b) (b) (b) (b) 40.5	(b) (b) (b) (b) (b) (b) (b) (b) 42.3	(b) (b) (b) (b) (b) (b) (b) (b) 40.6		(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) 46.4		
174 175 175 176	lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	7.6 657 (a) 37.1	9.7 861 (a) 38.6	11.7 1021 (a) 40.5	6.1 1100 (a) 46.7	10.0 624 (a) 48.1	9.0 1030 (a) 50.6	7.0 1018 (a) 44.8	7.0 985 (a) 41.6
176 177	lb/hr Standard deviation Accumulated fuel flow,	2.1 213		10.4 488		2.5 337	8.8 531	3.4 487	8.1 409
177 298	lb Standard deviation Present fuel flow,	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)
298 C06 C06 C07 C07 C08	lb/hr Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate,	(b) 0.12 0 36.2 6.8 4.3	0.12 0 37.8 8.6 4.5	0 36.3	0.13 0 42.2 5.4	(b) 0.13 0 44.2 8.8 5.9		(b) 0.13 0 40.9 6.2 5.4	36.8

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174 175	Standard deviation Fuel flow time, sec	7.6 657	9.7 861	11.7 1021	6.1 1100		9.0	7.0	
175	Standard deviation	(a)	(a)	(a)				1018	985
176	Previous fuel flow, lb/hr	37 . 1	38.6		(a) 46.7	(a) 48.1	(a) 50.6	(a) 44.8	(a) 41.6
176	Standard deviation	2.1	2.2	10.4	2 /	2 5		2.4	
177	Accumulated fuel flow,	213	464	488	3.4 467	2.5 337	8.8 531	3.4 487	8.1 409
177	Standard deviation	(a)	(2)	(-)	1-1	7 - 1	, ,	, ,	
298	Present fuel flow,	(b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a)	(a)	(a)
	1b/hr	(0)	(D)	(0)	(a)	(D)	(b)	(b)	(b)
298	Standard deviation	(b)	/ b.\	/h)	71.3	/			
C06	Sorbent-coal ratio	0.12	(b)	(b)	(b)	(b)	(b)	(b)	(þ)
C06	Standard deviation	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13
C07	Coal flow rate, 1b/hr	36.2	27.0	0	0	0	0	0	0
C07	Standard deviation		37.8	36.3	42.2	44.2	1.0	40.9	36.8
C08	Sorbent flow rate,	6.8	8.6	10.5	5.4	8.8		6.2	6.1
	lb/hr	4.3	4.5	4.3	5.5	5.9	5.5	5.4	5.0
C08	Standard deviation	0.8	1.0	1.2	0.7	1.2	1.1	0.0	0.0
C05	Fuel flow rate, 1b/hr	40.5	42.3	40.6	47.7	50.0		0.8	0.8
C 05	Standard deviation	7.6	9.6	11.7	6.1		46.5	46.3	41.8
C13	Input calcium-sulfur	1.86	1.86	1.86	2.03	10.0 2.07	9.0 2.07	7.0 2.07	7.0 2.14
C12	ratio						_		
C13	Standard deviation	0	0	0	0	0	0	0	0.01

 $^{\mbox{\scriptsize a}}\mbox{\scriptsize The data}$ or results obtained are obviously in error. $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter				Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
001	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	708	(a)	322	(a)	365	114	193
002		96	96	96	96	96	93	93
002		0	0	0	0	0	0	0
003		90	90	38	31	42	5	35
004		12	12	12	12	12	12	12
004	Standard deviation Fuel consumed, lb Fuel meter screw value	0	0	0	0	0	0	0
005		807	770	387	314	419	152∗	222
006		25	16	14	16	13	15	15
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	0 (b)	1 (b)	1 (b)	1 (b)	(p)	1 (b)
014	Standard deviation Fuel injector line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
022		83	81	83	77	82	90	95
022	Standard deviation Fuel injector differ- ential pressure, psid	5	3	5	4	3	4	3
033		2.99	0.70	0.43	1.99	0.83	0.74	0.28
033	Standard deviation Present fuel flow, lb/hr	0.29	0.19	0.14	0.37	0.31	0.32	0.26
092		(b)	(b)	(b)	(b)	(b)	(b)	(b)
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	(b) (b) (b) (b) (b) (b) (b) 44.6	(b) (b) (b) (b) (b) (b) (b) (b) 32.0	(b) (b) (b) (b) (b) (b) (b) (b) 32.0	(b) (b) (b) (b) (b) (b) (b) (b) 36.9	(b) (b) (b) (b) (b) (b) (b) (b) 33.0	(b) (b) (b) (b) (b) (b) (b) (b) 33.3	(b) (b) (b) (b) (b) (b) (b) (b) 36.7
174	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, 1b/hr	9.7	6.0	7.3	5.7	8.2	2.0	7.4
175		551	1272	1406	1299	1414	1248	1616
175		(a)	(a)	(a)	(a)	(a)	(a)	(a)
176		44.5	32.6	31.5	33.8	30.6	34.1	38.8
176	Standard deviation Accumulated fuel flow, 1b	1.6	0.9	3.5	1.6	1.9	1.6	15.7
177		481	476	719	287	735	186	408
177	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)
298	Present fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)

		0.7	<i>Ε</i> Λ	7.3	5.7	8.2	2.0	7.4
174	Standard deviation	9.7	6.0	1406	1299	1414	1248	1616
175	Fuel flow time, sec	551	1272			(a)	(a)	(a)
175	Standard deviation	(a)	(a)	(a)	(a)		34.1	38.8
176	Previous fuel flow, lb/hr	44.5	32.6	31.5	33.8	30.6		
176	Standard deviation	1.6	0.9	3.5	1.6	1.9	1.6	15.7
177	Accumulated fuel flow,	481	476	719	287	735	186	408
177	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)
298	Present fuel flow,	(b)	(þ)	(b)	(b)	(b)	(b)	(b)
230	1b/hr	` ,	. ,					
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(þ)
C06	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.13
C06	Standard deviation	0	0	0	0	0	0	0
C07	Coal flow rate, 1b/hr	39.4	28.2	28.2	32.6	29.1	29.4	32.4
C07	Standard deviation	8.6	5.3	6.4	5.0	7.3	1.8	6.5
C08	Sorbent flow rate,	5,2	3.8	3.8	4.3	3.9	3.9	4.3
COO	1b/hr							
C08	Standard deviation	1.1	0.7	0.9	0.7	1.0	0.2	0.9
C05	Fuel flow rate, lb/hr	44.6	31.9	32.0	36.9	33.0	33.3	36.7
C05	Standard deviation	9.7	6.0	7.3	5.7	8.2	2.0	7.4
	Input calcium—sulfur	2.07	2.07	2.07	2.07	2.07	2.07	2.07
C13	ratio		_,,,,					
C12	Standard deviation	0	0	0	0	0	0	0
C13	Standard deviation	v	•	-				

 $^{\mathrm{a}}$ The data or results obtained are obviously in error. $^{\mathrm{b}}$ Data or results were not obtained.

TABLE 4. - Continued.

Data	Parameter			•	τ	est			
chan- neï	. a. ae.e.	E1	E2	E3	E4	E5	E6	E9	E8
001 002 002 003	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b	195 95 0 23 16	211 95 1 25 17	244 96 0 29 16	253 96 0 30 16	259 95 0 30 16	168 95 0 19 16	146 95 0 17 16	337 96 0 39 16
004	Sorbent meter screw value								
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	0 217 26	0 236 30	0 273 24	0 283 24	0 289 25	0 188 16	0 163 24	0 376 29
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	0 (b)	(b)	0 (b)	0 (b)	(b)	(b)	(p)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
022 022	Standard deviation Fuel line pressure differential, psid	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)
022 033	Standard deviation Fuel injector differential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
033 092	Standard deviation Present fuel flow, 1b'hr	(b) 59.3	(b) 67.7	(b) 47.7	(b) 54.5	(b) 51.2	(b) 36.5	(b) 48.8	(b) 53.7
092 093 093 094 094 095	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb	13.8 581 (a) 55.5 14.9 429	8.4 629 (a) 66.6 8.9 786	15.2 349 (a) 50.4 2.8 256	13.3 605 (a) 52.0 5.4 406	14.8 897 (a) 50.6 2.3 700	4.9 1142 (a) 38.6 1.0 604	4.8 1471 (a) 46.4 1.6 240	12.9 700 (a) 47.3 14.7 740
095 100 100 174	Standard deviation Fuel flow indicated value Standard deviation Present fuel flow,	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)
174 175 175 176	<pre>lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr</pre>	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
177 298	Standard deviation Present fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)

100	ruel flow indicated value	··· (D)	('D')	(D)*		A. 1. 7. A. (E. D.) A. P.	(D)		A. 10 14
100	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(Ď)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, lb	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C06	Sorbent-coal ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
C06	Standard deviation	0	0	0	0	0	0	0	0
C07	Coal flow rate, lb/hr	53.2	60.6	42.8	48.8	45.8	32.7	43.7	48.1
C07	Standard deviation	12.3	7.5	13.6	12.0	13.2	4.4	4.3	11.5
C08	Sorbent flow rate, lb/hr	6.2	7.1	5.0	5.7	5.3	3.8	5.1	5.6
C08	Standard deviation	1.4	0.9	1.6	1.4	1.5	0.5	0.5	1.4
C05	Fuel flow rate, lb/hr	59.4	67.7	47.7	54.5	51.2	36.5	48.8	53.7
C05	Standard deviation	13.8	8.4	15.2	13,3	14.8	4.9	4.8	12.9
C13	Input calcium-sulfur ratio	1.81	1.82	1.81	1.81	1.81	1.79	1.81	1.81
C13	Standard deviation	0	0.02	0.01	0.01	0.01	0.01	0	0.01

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(u) continued:	ombas cor	· · · · pu	50111	,, au	•		
Data	Parameter				Test			
chan- nel		E19	E13A	E13B	E14	E11	E12	E15
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	186 96 0 20 15	71 96 0 6 12	88 96 0 8 12	126 96 0 11 12	131 95 0 11 12	115 96 0 15 21	55 (b) (b) 8 (b)
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	2 206 22	0 77 29	0 96 27	0 137 23	0 142 20	0 129 15	(b) 63 17
006 014	Standard deviation Fuel injector differential pressure, psid	0 (b)	0 (b)	0 (b)	0 (b)	1 (b)	(b)	0 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
022 022	Standard deviation Fuel line pressure	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
022 033	differential, psid Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
033 092	Standard deviation Present fuel flow,	(b) 50.3	(b) 60.9	(b) 53.1	(b) 48.0	(b) 38.4	(b) 45.8	(b) 42.5
092 093 093 094 094 095 095 100 100	lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	11.3 848 (a) 43.8 6.9 232 (a) (b) (b)	2.1 399 (a) 54.6 1.1 428 (a) (b) (b)	4.1 1098 (a) 52.6 1.9 538 (a) (b) (b)	13.4 514 (a) 47.3 5.5 733 (a) (b) (b)	12.7 1239 (a) 40.3 4.3 709 (a) (b) (b)	18.6 1066 (a) 32.3 2.4 138 (a) (b) (b)	4.9 1311 (a) 38.5 3.5 368 (a) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)
176 177	lb/hr Standard deviation Accumulated fuel flow,	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
177 298	<pre>1b Standard deviation Present fuel flow, 1b/hr</pre>	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
298 C06	Standard deviation	(b) 0.11	(b)	(b)	(b)	(b)	(b)	(b)

100	ruel flow indicated value	(n)	(.D.)	(n)	(.D.)	(n)		THE PERSON NAMED IN COLUMN
100	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Present fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	1b/hr							
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	1b				• •		` ,	
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C06	Sorbent-coal ratio	0.11	0.09	0.09	0.09	0.08	0.13	0.15
C06	Standard deviation	0.01	0	0	0	0.01	0.03	0
C07	Coal flow rate, lb/hr	45.3	55.9	48.8	44.1	35.5	40.6	37.0
C07	Standard deviation	10.1	1.9	3.7	12.4	11.7	16.1	4.2
C08	Sorbent flow rate,	5.0	4.9	4.3	3.9	2.9	5.2	5.5
_	1b/hr							
C08	Standard deviation	1.3	0.2	0.3	1.1	1.0	2.8	0.6
C05	Fuel flow rate, lb/hr	50.3	60.9	53.1	48.0	38.4	45.8	42.5
C05	Standard deviation	11.3	2.1	4.1	13.4	12.7	18.6	4.9
C13	Input calcium-sulfur ratio	1.73	1.38	1.37	1.38	1.28	1.96	2.30
C13	Standard deviation	0.18	0.02	0	0.01	0.13	0.46	0

 $^{\text{a}}\!\text{The}$ data or results obtained are obviously in error. $^{\text{b}}\!\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

Data	Parameter			•		Test				
chan- nel		F1	· F2	F3	F4	F6	F5	F7	F8	F9
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	188 95 0 22 16	219 96 0 26 17	132 96 0 15 16	230 96 0 27 17	191 96 0 22 17	81 (b) (b) 9 (b)	68 96 0 8 17	153 96 0 18 5	45 96 0 7 11
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	0 210 27	0 244 29	0 147 20	0 256 29	0 214 31	(b) 91 25	0 76 19	7 171 21	11 52 21
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	(p)	(b)	(b)	(b)	(b)	(p)	(p)	(p)
014 022	Standard deviation Fuel injector line temperature, °F	(b) (b)	(á) (d)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
022 022	Standard deviation Fuel line pressure differential, psid	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
022 033	Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 56.4	(b) 59.0	(b) 43.5	(b) 57.1	(b) 53.3	(b) 46.6	(b) 41.2	(b) 49.4	(b) 41.9
092 093 093 094 094 095	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb	9.3 691 (a) 53.0 4.2 605	5.5 693 (a) 58.3 2.8 792	7.7 1020 (a) 43.7 2.3 187	12.8 846 (a) 61.4 7.0 441	17.4 713 (a) 54.4 12.4 727	2.3 1307 (a) 47.9 2.8 824	1.7 1234 (a) 38.9 2.0 326	13.2 1094 (a) 49.8 16.2 723	3.6 1302 (a) 42.2 0.8 327
095 100 100 174	Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, 1b/hr	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)	(a) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, 1b/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)
176 177.	Standard deviation Accumulated fuel flow, 1b	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
177 298	Standard deviation Present fuel flow,	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)

100	Fuel flow indicated value	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	2 . 1
100	Standard deviation	(b)	(a)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
174	Present fuel flow, lb/hr	(b)	(Ъ)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	/ b\
175	Fuel flow time, sec	(\tilde{b})	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(6)	(6)
177.	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(6)	(6)	/ ៤ \
C06	Sorbent-coal ratio	0.12	0.12	0.12	0.12	0.12	0.11	(b) 0.12	(b) 0.12	(b)
C06	Standard deviation	0	0	0	0.12	0.12	0.11	0.12	0.12	0.15 0
C07	Coal flow rate, 1b/hr	50.5	52.8	38.9	51.1	47.8	41.8	36.9	44.2	36.4
C07	Standard deviation	8.4	4.9	6.9	11.5	15.6	2.1	1.5	11.8	3.2
C08	Sorbent flow rate, lb/hr	5.9	6.2	4.5	6.0	5.6	4.8	4.3	5.2	5.6
C08	Standard deviation	1.0	0.6	0.8	1.3	1.8	0.2	0.2	1.3	0 5
C05	Fuel flow rate, 1b/hr	56.4	58.9	43.5	57.1	53.3	46.6	41.2	49.4	0.5 41.9
C05	Standard deviation	9.3	5.5	7.7	12.8	17.4	2.3	1.7	13.2	3.6
C13	Input calcium-sulfur ratio	1.82	1.83	1.82	1.82	1.81	1.79	1.82	1.83	2.39
C13	Standard deviation	0.01	0.01	0.01	0.02	0.02	0	0.01	0.03	0.02

TABLE 4. - Continued.

		• •			•					
	Data.	Parameter				T	est			
	chan- nel		F19	F16	F27	G2	· G 3	G 6	G1	G5
((001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw	179 96 0 19 9	(b) (b) 17	135 96 0 8 7	9	111 96 0 13 17	91 96 0 11 16	75 95 0 6 12	165 96 0 15 12
(004 005 006	value Standard deviation Fuel consumed, 1b Fuel meter screw	7 198 32	Ì96	0 143 29	0 88 10	0 124 10	0 102 6	0 81 5	0 180 18
	006 014	value Standard deviation Fuel injector differ- ential pressure,	(p)	0 (b)	(b)	1 (b)	(p)	(p)	0 (b)	(b)
	014 022	psid Standard deviation Fuel injector line temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
	022 022	Standard deviation Fuel line pressure differential, psid	(b) 0.227	(b) 0.218	(b) 0.176	(b) 0.057	(b) 0.219	(b)	(b)	(b)
	022 033	Standard deviation Fuel injector differ- ential pressure, psid		0.078 (b)			(b)	(b) (b)	(b)	(b)
	033 092	Standard deviation Present fuel flow, lb/hr	(b) 58.5			(b) 31.6	(b) 29.6	(b) 27.1	(b) 25.5	(b) 49.2
(092 093 093	Standard deviation Fuel flow time, sec Standard deviation	10.2 665 (a)	1338 (a)	6.8 650 (a)	13.8 1429 (a)	11.2 1208 (a)	4.8 1349 (a)	13.2 1338 (a)	7.7 957 (a)
((094 094 095 095 100	Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value	56.6 5.9 535 (a) (b)	55.4 8.8 782 (a) (b)	50.8 7.6 83 (a) (b)	25.4 5.4 293 (a) (b)	32.5 1.1 473 (a) (b)	27.7 0.9 634 (a) (b)	26.8 18.8 106 (a) (b)	43.1 2.5 318 (a) (b)
	100 100 174	Standard deviation Present fuel flow, lb/hr	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
:	174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
•	176 177	1b/hr Standard deviation Accumulated fuel flow, 1b	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
	177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

	lb/hr	A Company of the Comp	an annual designation	and Age in also bead.	a in the collection of the	Contraction of the State of		A PROPERTY OF THE PARTY OF THE	THE PERSON NAMED IN
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, lb	(b)	(b)	(p)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C06	Sorbent-coal ratio	0.11	0.09	0.06	0.12	0.12	0.12	0.09	0.09
C06	Standard deviation	0.03	0	0	0	0	0	0.01	0
CO7	Coal flow rate, lb/hr	52.9	49.0	47.1	28.3	26.5	24.3	23.4	45.2
C07	Standard deviation	9.4	2.0	6.5	12.3	10.0	4.3	12.2	7.1
C08	Sorbent flow rate, lb/hr	5.6	4.5	2.6	3.3	3.1	2.8	2.1	4.0
C08	Standard deviation	1.5	0.2	0.3	1.4	1.2	0.5	1.0	0.6
C05	Fuel flow rate, lb/hr	58.6	53.4	49.8	31.6	29.6	27.1	25.5	49.2
C05	Standard deviation	10.2	2.2	6.8	13.8	11.2	4.8	13.2	7.7
C13	Input calcium-sulfur ratio	1.68	1.42	0.87	1.82	1.82	1.80	1.41	1.37
C13	Standard deviation	0.43	0	0.01	0	0.01	0	0.18	0.01

 $^{\text{a}}\text{The}$ data or results obtained are obviously in error. $^{\text{b}}\text{D}$ ata or results were not obtained.

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	129 96 0 11 12	106 96 0 9 12	52 96 0 8 21	47 96 0 7 22	85 96 0 13 21	118 96 0 18 21	53 (b) (b) 8 (b)	106 96 0 9 12	54 96 0 5 12
004 005 006	Standard déviation Fuel consumed, lb Fuel meter screw value	0 141 15	0 115 9	0 59 9	0 54 14	0 97 7	0 136 11	(b) 61 7	0 115 24	0 58 6
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	(b)	(b)	0 (b)	1 (b)	(b)	0 (b)	(b)	0 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
022 022	Standard deviation Fuel line pressure	(b) (b)	(b)	(b) (b)	(b)	(b) 0.111	(b) 0.014	(b) 0.020	(b) (b)	(b)
022 033	<pre>differential, psid Standard deviation Fuel injector differ- ential pressure, psid</pre>	(b)	(b) (b)	(b)	(b) (b)	0.060 (b)	0.005 (b)	0 (b)	(b) (b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 39.5	(b) 32.7	(b) 30.2	(b) 30.9	(b) 30.0	(b) 19.5	(b) 17.4	(b) 35.8	(b) 13.8
092 093 093 094 094 095 095 100 174	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow,	8.1 1444 (a) 41.8 10.7 541 (a) (b) (b)	13.3 1315 (a) 26.8 1.9 701 (a) (b) (b)	2.7 1602 (a) 25.1 5.7 61 (a) (b) (b)	1.5 1611 (a) 30.1 1.7 229 (a) (b) (b)	4.3 1670 (a) 26.1 4.5 337 (a) (b) (b)	11.3 1796 (a) 23.1 8.7 504 (a) (b) (b)	3.7 2454 (a) 18.2 2.3 663 (a) (b) (b)	3.6 1645 (a) 40.0 7.8 793 (a) (b) (b)	5.2 1771 (a) 15.5 0.8 957 (a) (b) (b)
174 175 175 176	lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
128	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(D)	(b)

094 095 095 100 100 174	Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	10.7 541 (a) (b) (b) (b)	1.9 701 (a) (b) (b) (b)	5.7 61 (a) (b) (b) (b)	1.7 229 (a) (b) (b) (b)	4.5 337 (a) (b) (b) (b)	8.7 504 (a) (b) (b) (b)	2.3 663 (a) (b) (b) (b)	7.8 793 (a) (b) (b) (b)	0.8 957 (a) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b)	(b)	(b) (b)	(b)	(b)	(b)	(d) (d)	(b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
128 C06 C06 C07 C07 C08	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate,	(b) 0.09 0 36.4 7.4 3.1	(b) 0.09 0 30.0 12.2 2.7	(b) 0.15 0 26.3 2.3 3.9	(b) 0.15 0 26.9 1.3 4.0	(b) 0.15 0 26.2 3.8 3.9	(b) 0.15 0 17.0 9.8 2.5	(b) 0.15 0 15.2 3.2 2.2	(b) 0.09 0 32.9 3.3 2.9	(b) 0.09 0 12.6 4.8 1.1
C08 C05 C05 C13	lb/hr Standard deviation Fuel flow rate, lb/hr Standard deviation Input calcium-sulfur ratio	0.6 39.5 8.1 1.35	1.1 32.7 13.3 1.38	0.3 30.2 2.7 2.31	0.2 30.9 1.5 2.33	0.6 30.0 4.3 2.31	1.5 19.5 11.3 2.31	0.5 17.4 3.7 2.29	0.3 35.8 3.6 1.37	0.4 13.8 5.2 1.37
C13	Standard deviation	0	0	0	0	0.01	0.01	0	0	0.01

 $^{\text{a}}\!\mathsf{The}$ data or results obtained are obviously in error. $^{\text{b}}\!\mathsf{Data}$ or results were not obtained.

TABLE 4. - Continued.

	` '			•					
Data	Parameter				•	Γest			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	66 96 0 5 7	72 96 0 4 7	50 (b) (b) 3 (b)	26 (b) (b) 1 (a)	122 96 0 15 17	68 96 0 8 16	92 96 0 11 16	76 (b) (b) 9 (b)
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	0 72 11	0 76 16	(b) 53 6	(b) 28 12	0 136 17	0 76 12	0 102 19	(b) 84 16
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	(b)	1 (b)	1 (b)	2 (b)	(b)	(b)	(b)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
022 022	Standard deviation Fuel line pressure differential, psid	(b)	(b) 0.174	(b) 0.174		(b) 0.143	(b) 0.126	(b) (a)	(b) (a)
022 033	Standard deviation Fuel injector differential pressure, psid		0.074 (b)					(b) (b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 19.6	(b) 25.3	(b) 14.2	(b) 23.6	(b) 32.8	(b) 24.7	(b) 43.1	(b) 29.8
092 093 093 094 094 095 095 100 100 174	Standard deviation Fuel flow time, sec Standard deviation Previous-fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	7.4 1126 (a) 20.1 7.1 59 (a) (b) (b)	3.2 1520 (a) 23.4 1.2 240 (a) (b) (b)	6.9 1760 (a) 17.6 4.8 342 (a) (b) (b)	3.1 1628 (a) 21.3 1.0 470 (a) (b) (b)	5.1 1097 (a) 34.3 9.1 580 (a) (b) (b)	11.2 1225 (a) 23.1 5.6 715 (a) (b) (b)	23.0 1114 (a) 30.7 3.5 875 (a) (b) (b)	5.2 1532 (a) 30.0 2.4 562 (a) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	<pre>lb/hr Standard deviation Accumulated fuel flow, lb</pre>	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177 298	Standard deviation Present fuel flow, 1b/hr	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
298 C06	Standard deviation Sorbent-coal ratio	(b) 0.08	(b) 0.06	(b) 0.06	(b) 0.06	(b) 0.11	(b)	(b) 0.11	(b) 0-11

100	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(6)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b.)	/61
177	Accumulated fuel flow, lb	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	/ b\	/ L \	/ L \
298	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(6)	/61
C06	Sorbent-coal ratio	0.08	0.06	0.06	0.06	0.11	0.12	(b) 0.11	(b) 0.11
C06	Standard deviation	0.02	0	0	0	0.02	0.12	0.11	0.11
C07	Coal flow rate, 1b/hr	18.2	23.9	13.4	22.3	29.6	22.2	38.7	26.7
C07	Standard deviation	6.8	3.0	6.6	2.9	4.6	10.1	20.7	4.6
C08	Sorbent flow rate, lb/hr	1.4	1.4	0.8	1.3	3.3	2.6	4.4	3.1
C08	Standard deviation	0.6	0.2	0.4	0.2	0.8	1.2	2.4	0.5
C05	Fuel flow rate, lb/hr	19.6	25.3	14.2	23.6	32.8	24.7	43.1	29.8
C05	Standard deviation	7.4	3.2	6.9	3.1	5.1	11.2	23.0	5.2
C13	Input calcium-sulfur ratio	1.18	0.89	0.89	0.89	1.72	1.81	1.78	1.78
C13	Standard deviation	0.24	0	0	0	0.31	0.02	0	0

 $^{\mbox{\scriptsize a}}_{\mbox{\scriptsize D}}$ the data or results obtained are obviously in error. $^{\mbox{\scriptsize b}}_{\mbox{\scriptsize D}}$ ata or results were not obtained.

FOLDOUT FRAME 2

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TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(a) Continued	. – Cor	nbusto	r input	t soli	ds dat	a			
Data chan-	Parameter					Test				
nel		Н1	Н2	Н3	Н4	H5A	Н5В	Н6	Н7	Н8
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	106 95 0 5 7	84 (b) (b) 4 (a)	155 95 0 8 6	210 95 0 10 5	89 95 0 4 5	94 95 0 5 7	138 95 0 7	224 95 0 12 5	203 95 0 20 16
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 112 18	(b) 88 25	(a) 163 31	(a) 221 29	(a) 93 40	0 99 46	0 146 46	(a) 236 44	0 223 37
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	(b)	(b)	(b)	1 (b)	(b)	(b)	0 (b)	(b)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
022 022	Standard deviation Fuel line pressure differential, psid	(b)	(b)	(b) (a)	(b) (a)	(b) (a)	(b) 0.16	(b) 0.15	(b) (a)	(b) 0.12
022 033	Standard deviation Fuel injector differ- ential pressure, psid	(b)	(b)	(b)	(b)	(b)	0.21 (b)	(p)	(b)	0.04 (b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 36.0	(b) 42.5	(b) 49.7	(b) 48.7	(b) 72.7	(b) 102.4	(b) 92.5	(b) 72.2	(b) 62.1
092 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	2.8 1451 (a) 35.1 1.2 334 (a) 46 (a) (b)	2.8 1159 (a) 44.5 0.6 799 (a) (b) (b)	8.9 849 (a) 48.1 2.1 1024 (a) (b) (b) (b)	13.7 662 (a) 47.3 3.6 448 (a) (b) (b)	18.5 621 (a) 71.3 15.0 370 (a) (b) (b)	0.1 645 (a) 101.8 1.0 66 (a) 46 (a) (b)	16.6 459 (a) 91.9 17.5 343 (a) (b) (b)	25.5 588 (a) 95.0 12.8 219 (a) (b) (b)	4.8 901 (a) 60.9 2.9 328 (a) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	<pre>lb/hr Standard deviation Accumulated fuel flow, lb</pre>	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 34.7	(b) 43.2	(b) 45.6	(b) 47.9	(b) 60.9	(b) 70.9	(b) 163.0	(b) 65.6	(b) 60.7
	19/111									

095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	: :	(ā)
100	Fuel flow indicated value	46	(b)	(b)	(b)	(b)	46	(b)	(b)	(b)
100	Standard deviation	(a)	(b)	(b).	(b)	(b)	(a)	(b)	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)						
174	Standard deviation	(b)	(b)	(b)						
175	Fuel flow time, sec	(b)	(b)	(b)						
175	Standard deviation	(b)	(b)	(b)						
176	Previous fuel flow, lb/hr	(b)	(b)	(b)						
176	Standard deviation	(b)	(b)	(b)						
177	Accumulated fuel flow, lb	(b)	(b)	(b)						
177	Standard deviation	(b)	(b)	(b)						
298	Present fuel flow, lb/hr	34.7	43.2	45.6	47.9	60.9	70.9	163.0	65.6	60.7
298	Standard deviation	1.6	0.9	4.4	3.7	2.1	1.8	183.4	7.8	7.0
C06	Sorbent-coal ratio	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.09
C06	Standard deviation	0	0	0	0	0	0	0	0	0.03
C07	Coal flow rate, 1b/hr	32.9	41.2	43.5	45.6	58.1		155.3	62.3	55.6
C07	Standard deviation	1.4	0.9	4.2	3.6	2.0		174.4	7.5	6.1
C08	Sorbent flow rate, lb/hr	1.7	2.0	2.1	2.3	2.9	3.4	7.7	3.2	5.1
C08	Standard deviation	0.2	0	0.2	0.1	0.1	0.1	8.6	0.3	1.9
C05	Fuel flow rate, lb/hr	34.7	43.2	45.6	47.9	60.9	70.9	163.0	65.6	60.6
C05	Standard deviation	1.6	0.9	4.4	3.7	2.1	1.8		7.8	7.0
C13	Input calcium-sulfur ratio	0.81	0.76	0.76	0.77	0.77	0.77	0.78	0.81	1.43
C13	Standard deviation	0.04	0	0.02	0.02	0.01	0	0.05	0.04	0.51

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter					ïest				
chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	Н18
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	219 95 0 26 11	206 95 0 24 12	212 95 0 26 11	144 95 0 17 13	159 95 0 19 13	167 95 0 19 12	167 95 9 20 16	197 95 1 23 16	175 95 0 21 17
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a) 246 38	(a) 231 44	(a) 238 38	(a) 162 20	(a) 179 37	(a) 186 31	0 187 30	0 220 34	0 196 34
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	1 (b)	0 (b)	0 (b)	1 (b)	2 (b)	0 (b)	1 (b)	1 (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
022 022	Standard deviation Fuel line pressure differential, psid	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
022 033	Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 60.9	(b) 66.6	(b) 56.3	(b) 39.6	(b) 60.3	(b) 62.7	(b) 49.0	(b) 58.3	(b) 57.5
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	5.5 1111 (a) 66.5 13.1 613 (a) (b) (b)	13.2 512 (a) 70.1 2.8 673 (a) 46 0 (b)	15.5 641 (a) 59.5 2.2 221 (a) (b) (b)	3.0 1128 (a) 38.6 2.4 452 (a) 46 0 (b)	2.5 769 (a) 60.7 2.7 671 (a) (b) (b)	33.4 1021 (a) 50.3 2.4 167 (a) 46 0 (b)	6.8 720 (a) 50.5 4.7 418 (a) (b) (b)	8.8 838 (a) 54.4 3.5 663 (a) (b) (b)	2.8 884 (a) 54.5 3.6 692 (a) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, lb	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 60.5	(b) 72.3	(b) 61.1	(b) 54.2	(b) 60.1	(b) 51.7	(b) 50.4	(b) 57.1	(b) 52.9
298 C06	Standard deviation Sorbent-coal ratio	2.7 0.12	8.1 0.12	5.5 0.12	42.9 0.12	4.6 0.12	4.5 0.11	2.1 0.12	6.5 0.12	8.5 0.12

094	Standard deviation	13.1	2.8	2.2	2.4	2.7	2.4	4.7	3.5	3.6
095	Accumulated fuel, 1b	613		221	452	671	167	418	663	692
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	(b)	`46	(b)	46	(Ď)	46	(b)	(b)	(b)
100	Standard deviation	(b)	0	(b)	0	(b)	0	(b)	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(5)	/ L \
175	Fuel flow time, sec	(b)	(\tilde{b})	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	, ,
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	/h)	/ L \
177	Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(5)	/ h \	/ L \
298	Present fuel flow, lb/hr	60.5	72.3	61.1	54.2	60.1	51.7	(b) 50.4	(b) 57.1	(b) 52.9
298	Standard deviation	2.7	8.1	5.5	42.9	4.6	4.5	2.1	6.5	0.5
C06	Sorbent-coal ratio	0.12	0.12	0.12	0.12	0.12	0.11	0.12		8.5
C06	Standard deviation	0	0	0	0.12	0.01	0.11	0.12	0.12	0.12
C07	Coal flow rate, 1b/hr	54.0	64.6	54.6	48.5	53.6	46.5	45.1	51.1	47.3
C07	Standard deviation	2.5	7.0	5.0	38.5	4.0	4.1	2.0	5.8	7.6
C08	Sorbent flow rate, lb/hr	6.5	7.6	6.5	5.7	6.5	5.3	5.3	5.9	5.6
C08	Standard deviation	0.3	1.1	0.5	4.5	0.7	0.5	0.2	0.6	0.9
C05	Fuel flow rate, lb/hr	60.5	72.3	61.1	54.2	60.1	51.7	50.4	57.1	52.9
C05	Standard deviation	2.7	8.1	5.5	42.9	4.6	4.5	2.1	6.5	8.5
C13	Input calcium-sulfur ratio	1.87	1.83	1.86	1.84	1.88	1.77	1.83	1.81	1.84
C13	Standard deviation	0.06	0.06	0.03	0.06	0.09	0	0.05	0.04	0.05

TABLE 4. - Continued.

Data chan—	Parameter			Tes	t		
nel		H19	H20	H23	H24	H25	H26
001	Coal consumed, 1b	179	190	272	206	233	173
002	Coal meter screw value	95	95	95	95	95	94
002	Standard deviation	0	0	. 0	0	0	0
003	Sorbent consumed, 1b	43	48	25	20	27	20
004	Sorbent meter screw value	31	35	15	13	16	16
004	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)
005	Fuel consumed, 1b	222	239	297		260	194
006	Fuel meter screw value	38	41	38	35	38	39
006	Standard deviation	1	0	1	1	1	0
014	Fuel injector differ-	(b)	(b)	(b)	(b)	(b)	(b)
	ential pressure,						
014	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
022	Fuel injector line	(b)	(b)	(b)	(b) (b)	· (b)	(b)
0-2	temperature, °F	(5)	(2)	(5)	(5)	(5)	(5)
022	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
022	Fuel line pressure	(b)	(b)	(b)	(b)	(b)	(b)
000	differential, psid	(1.)	(1.)	(1.)	(1.)	41.3	/
022 033	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
033	Fuel injector differ- ential pressure,	(0)	(0)	(0)	(n)	(b)	(b)
	psid						
033	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
092	Present fuel flow,	6 ì. 8	72 . 6	5 9. 7	83 . 1	77 . 4	67 . 5
	1b/hr						
092	Standard deviation	5.9	12.8	9.9	40.3	26.6	8.9
093	Fuel flow time, sec	925	599	826	759	690	617
093 094	Standard deviation Previous fuel flow, lb/hr	(a) 67.1	(a) 69.6	(a) 64.9	(a) 58.4	(a) 63.3	(a) 61.4
094	Standard deviation	9.2	3.5	11.5	3.8	2.3	1.5
095	Accumulated fuel, 1b	258	569	493	269	542	788
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	46	(b)	46	(b)	(b)	46
100	Standard deviation	. 0	(b)	. 0	(b)	(b)	, 0
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow,	61.4	67.3	61.4	60.3	63.5	60.7
	1b/hr		22			4	
298	Standard deviation	4.2	5.2	5.8	7.1	1.5	4.0
C06	Sorbent-coal ratio	0.22	0.25	0.11	0.10	0.11	0.12

U94	Standard deviation	9.2	3.5	11.5	3.8	~~2:3	1.5
095	Accumulated fuel, 1b	258	569	493	269	542	788
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	`46	(b)	`46	(b)	(b)	46
100	Standard deviation	0	(b)	0	(b)	(b)	0
174	Present fuel flow.	(b)	(b)	(b)	(b)	(b)	(b)
	lb/hr	ν - /	(-)	(-)	(2)	(5)	(5)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(\tilde{b})	(b)	(b)
176	Previous fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)
	1b/hr	()	(,	(~)	(~)	(5)	(5)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)
	1b	, ,	` '	` ,	\- <i>\</i>	(-)	(-)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow,	6Ì.4	67 . 3	6Ì.4	60.3	63.5	60.7
	lb/hr						
298	Standard deviation	4.2	5.2	5.8	7 . 1	1.5	4.0
C06	Sorbent-coal ratio	0.22	0.25	0.11	0.10	0.11	0.12
C06	Standard deviation	0.06	0	0.09	0.03	0	0
C07	Coal flow rate, 1b/hr	50.4	53.7	55.3			54.4
C07	Standard deviation	3.0	4.1	2.2	7.7	1.3	3.6
C08	Sorbent flow rate,	11.0	13.5	6.0	5.1	6.5	6.3
	lb/hr				• • • •	0.0	0.0
C08	Standard deviation	3.0	1.0	5.2	1.3	0.2	0.4
C05	Fuel flow rate, lb/hr	61.4	67.3		60.3	63.5	60.7
C05	Standard deviation		5.2	5.8	7.1	1.5	4.0
C13	Input calcium-sulfur	3.42	3.92	1.70	1.48	1.77	1.81
	ratio						-
C13	Standard deviation	0.95	0.02	1.45	0.44	0.01	0.02

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(a) continued	. – 601	iibuscoi	· mpu	L SOLIC	is uac	2				
Data chan—	Parameter					Test					
nel		I1	12	13	14	15	I5B	16	17	18	
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	239 95 0 41 12	327 95 0 54 17	184 95 0 29 16	160 95 0 26 12	71 95 0 13 14	74 95 0 13 9	218 95 0 22 9	245 95 0 16 5	120 95 0 8 5	
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a) 280 45	(a) 381 50	(a) 214 40	(a) 186 28	(a) 84 36	(a) 87 36	(a) 240 49	(a) 262 56	(a) 129 47	
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	(b)	(p)	(b)	(b)	(b)	1 (b)	1 (b)	(b)	
014 022	Standard deviation Fuel injector line temperature, F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	
022 022	Standard deviation Fuel line pressure differential, psid	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	
022 033	Standard deviation Fuel injector differential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	
033 092	Standard deviation Present fuel flow, lb/hr	(b) 74.0	(b) 73.4	(b) 62.0	(b) 52.3	(b) 57.1	(b) 60.7	(b) 75.5	(b) 83.3	(b) 64.9	
092 093 093 094 094 095 095 100 100 174	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	8.4 705 (a) 68.6 2.8 232 (a) 46 0 (b)	21.1 359 (a) 76.5 3.0 600 (a) (b) (b)	3.5 841 (a) 61.6 2.7 534 (a) (b) (b)	13.6 827 (a) 46.1 1.6 211 (a) (b) (b)	24.2 531 (a) 54.8 1.1 398 (a) (b) (b) (b)	6.8 877 (a) 57.5 3.1 506 (a) (b) (b)	16.1 659 (a) 68.6 3.4 780 (a) (b) (b)	25.3 647 (a) 72.6 2.7 217 (a) 46 0 (b)	5.4 701 (a) 61.1 4.6 602 (a) (b) (b)	
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	
176 177	Standard deviation Accumulated fuel flow, lb	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	
177 298	Standard deviation Present fuel flow, lb/hr	(b) 69.3	(b) 75.2	(b) 62.2	(b) 46.3	(b) 54.5	(b) 57.8	(b) 70.4	(b) 73.8	(b) 65.1	
298 C06	Standard deviation Sorbent-coal ratio	2.9 0.17	5.2 0.16	2.4 0.16	1.1 0.16	3.1 0.18	1.4 0.17	5.8 0.11	2.9 0.07	4.4 0.07	

100	Standard deviation	0	(b)	** (b)**	(b)	(b)	(b)	, – <i>,</i>		(D)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
177	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	69.3	75.2	62.2	46.3	54.5	57.8	70.4	73.8	65.1
298	Standard deviation	2.9	5.2	2.4	1.1	3.1	1.4	5.8	2.9	4.4
C06	Sorbent-coal ratio	0.17	0.16	0.16	0.16	0.18	0.17	0.11	0.07	0.07
C06	Standard deviation	0.01	0	0	0	0	0.01	0.05	0	0
CO7	Coal flow rate, lb/hr	59.2	64.6	53.6	39.9	46.2	49.3	63.7	69.1	61.0
C07	Standard deviation	2:5	4.6	2.1	1.0	2.7	1:3	5.3	2.7	4.1
C08	Sorbent flow rate, lb/hr	10.1	10.5	8.6	6.4	8.2	8.5	6.8	4.7	4.1
C08	Standard deviation	0.6	0.6	0.3	0.2	0.5	0.3	2.8	0.3	0.3
C05	Fuel flow rate, lb/hr	69.3		62.2	46.3	54.5	57.8	70.4	73.8	65.1
C05	Standard deviation	2.9	5.2	2.4	1.0	3.1	1.4	5.8	2.9	4.4
C13	Input calcium-sulfur ratio	1.40	1.34	1.31	1.32	1.42	0.88	0.55	0.55	0.55
C13	Standard deviation	0.07	0.03	0.01	0.04	0.04	0.05	0.38	0.02	0

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter			Tes	t		
chan- nel		19	I10A	I10B	I11	I12	113
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	200 95 0 15 6	125 95 0 19 17	60 95 0 22 36	181 95 0 65 28	226 94 0 81 29	239 95 0 86 36
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a) 215 36	(a) 144 31	(a) 82 31	(a) 246 37	(a) 307 46	(a) 326 57
006 014	Standard deviation Fuel injector differ- ential pressure, psid	0 (b)	2 (b)	1 (b)	1 (b)	(b)	2 (b)
014 022	Standard deviation Fuel injector line	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
022 022	temperature, F Standard deviation Fuel line pressure	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
022 033	differential, psid Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 68.9	(b) 61.9	(b) 50.1	(b) 79.7	(b) 75.8	(b) 98.6
092 093 094 094 095 095 100 174	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	35.8 656 (a) 65.9 40.9 796 (a) (b) (b)	14.9 546 (a) 49.0 3.9 429 (a) (b) (b)	4.8 963 (a) 52.9 6.2 128 (a) (b) (b)	37.5 510 (a) 62.7 1.3 327 (a) (b) (b) (b)	6.5 592 (a) 75.5 5.1 792 (a) 34 12 (b)	4.4 513 (a) 94.5 4.0 246 (a) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	<pre>lb/hr Standard deviation Accumulated fuel flow, lb</pre>	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 53.5	(b) 47.2	(b) 55.2	(b) 60.3	(b) 76.6	(b) 93.4
298 C06 C06	Standard deviation Sorbent-coal ratio Standard deviation	1.7 0.07 0	3.3 0.15 0.13	2.4 0.36 0.01	2.4 0.36 0	1.9 0.36 0.01	3.4 0.36 0.01

ruel flow matcated value	(n)		יינים)			רעו) יייי
Standard deviation	(b)	(b)	(b)	(b)	12	(b)
					(b)	(b)
	` '	` ,	` '	` ,	` ,	. ,
·	(b)	(b)	(b)	(b)	(b)	(b)
		(b)				(b)
Standard deviation		(b)			* *	(b)
Previous fuel flow,						(b)
lb/hr	` '	` '	` ,	• •	` ,	` '
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b)
1b						
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
Present fuel flow,	53.5	47.2	55.2	60.3	76.6	93.4
lb/hr						
Standard deviation	1.7			2.4	1.9	3.4
Sorbent-coal ratio	0.07		0.36	0.36	0.36	0.36
Standard deviation	0	0.13	0.01	0	0.01	0.01
Coal flow rate, lb/hr	49.9	41.5	40.7	44.4	56.4	68.8
Standard deviation	1.6	5.9	1.6	1.8	1.6	2.5
Sorbent flow rate,	3.6	5.6	14.4	15.8	20.2	24.6
lb/hr						
Standard deviation	0.2	4.0	0.8	0.6	0.4	0.9
Fuel flow rate, lb/hr	53.5	47.2	55.2	60.3	76.6	93.4
Standard deviation	1.7	3.3		2.4	1.9	3.4
Input calcium-sulfur	0.60	1.25	2.92	2.93	2.94	2.94
ratio						
Standard deviation	0.03	1.07	0.05	0.04	0.07	0.05
	Standard deviation Present fuel flow, lb/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel flow, lb Standard deviation Present fuel flow, lb/hr Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate, lb/hr Standard deviation Fuel flow rate, lb/hr Standard deviation Input calcium-sulfur ratio	Standard deviation Present fuel flow, 1b/hr Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, 1b/hr Standard deviation Accumulated fuel flow, 1b Standard deviation Present fuel flow, 1b/hr Standard deviation Present fuel flow, 1b/hr Standard deviation Sorbent-coal ratio Sorbent-coal ratio Coal flow rate, 1b/hr Standard deviation Sorbent flow rate, 1.6 Sorbent flow rate, 1.6 Sorbent flow rate, 1.7 Standard deviation Sorbent flow rate, 1.6 Sorbent flow rate, 1.7 Input calcium-sulfur 0.60 ratio	Standard deviation (b) (b) Present fuel flow, (b) (b) Ib/hr Standard deviation (b) (b) Fuel flow time, sec (b) (b) Standard deviation (b) (b) Previous fuel flow, (b) (b) Ib/hr Standard deviation (b) (b) Ib Standard deviation (b) (b) Present fuel flow, (b) (b) Present fuel flow, 53.5 47.2 Ib/hr Standard deviation 1.7 3.3 Sorbent-coal ratio 0.07 0.15 Standard deviation 0.13 Coal flow rate, 1b/hr Standard deviation 1.6 5.9 Sorbent flow rate, 3.6 5.6 Ib/hr Standard deviation 0.2 4.0 Fuel flow rate, 1b/hr 53.5 47.2 Standard deviation 1.7 3.3 Input calcium-sulfur 0.60 1.25 ratio	Standard deviation Present fuel flow, Ib/hr Standard deviation Fuel flow time, sec Standard deviation Fuel flow time, sec Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, Ib/hr Standard deviation Accumulated fuel flow, Ib Standard deviation Standard deviation Sorbent-coal ratio Sorbent flow rate, Ib/hr Standard deviation Fuel flow rate, Ib/hr Fuel flow rate,	Standard deviation (b) (b) (b) (b) (b) Present fuel flow, lb/nr (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) Fuel flow time, sec (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) Previous fuel flow, lb/nr (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) Accumulated fuel flow, lb/nr (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) Present fuel flow, lb/nr 53.5 47.2 55.2 60.3 Standard deviation 0.07 0.15 0.36 0.36 Standard deviation 0.013 0.01 0 Coal flow rate, lb/hr 49.9 41.5 40.7 44.4 Standard deviation 1.6 5.9 1.6 1.8 Sorbent flow rate, lb/hr 3.6 5.6 14.4 15.8 1b/hr 15.8 47.2 55.2 60.3 Standard deviation 0.2 4.0 0.8 0.6 Fuel flow rate, lb/hr 53.5 47.2 55.2 60.3 Standard deviation 1.7 3.3 2.4 2.4 Input calcium-sulfur 0.60 1.25 2.92 2.93	Standard deviation (b) (b) (b) (b) (b) Present fuel flow, (b) (b) (b) (b) (b) Ib/hr Standard deviation Standard deviation (b) (b) (b) (b) (b) (b) Fuel flow time, sec (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) (b) Standard deviation (b) (b) (b) (b) (b) (b) Standard deviation 1.7 3.3 2.4 2.4 1.9 Sorbent-coal ratio 0.07 0.15 0.36 0.36 0.36 Standard deviation 0.013 0.01 0 0.01 Coal flow rate, 1b/hr 49.9 41.5 40.7 44.4 56.4 Standard deviation 1.6 5.9 1.6 1.8 1.6 Sorbent flow rate, 1b/hr 3.6 5.6 14.4 15.8 20.2 1b/hr Standard deviation 0.2 4.0 0.8 0.6 0.4 Fuel flow rate, 1b/hr 53.5 47.2 55.2 60.3 76.6 Standard deviation 0.2 4.0 0.8 0.6 0.4 Fuel flow rate, 1b/hr 53.5 47.2 55.2 60.3 76.6 Standard deviation 0.2 4.0 0.8 0.6 0.4 Fuel flow rate, 1b/hr 53.5 47.2 55.2 60.3 76.6 Standard deviation 0.60 1.25 2.92 2.93 2.94

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

FOLDOUT FRAME

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TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

		(a) continued	001	1100300	impu	5011	J Guci	•			
Da ch	ta an-	Parameter					Test				
ne			J1	J2	J3	J4	J5	J6	J7	, J8	J9
00	1	Coal consumed, 1b	181	191	192	154	210	209	145	228	99
00	2	Coal meter screw value	87	87	88	87	95	95	94	95	94
00		Standard deviation	0	1	0	0	0	0	0	0	0
00		Sorbent consumed, 1b	23	24	25	20	27	13	9	14	6
004	4	Sorbent meter screw	4	7	7	8	5	4	5	5	6
004	4	value Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
00!		Fuel consumed, 1b	205	216	217	174	237	222	154	243	105
00		Fuel meter screw	19	31		34	53	53	32	33	22
		value			(
000		Standard deviation	2	0	0	0	1	0	1	1	0
014	4	Fuel injector differ-	3.19	6.05	10.94	1.93	1.28	(b)	2.80	4.79	2.28
		ential pressure, psid									
01	4	Standard deviation	0.69	0.27	0.82	1.21	0.66	(b)	0.10	0.19	0.19
02		Fuel injector line	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		temperature, °F							4	4	4. •
02		Standard deviation	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
023	2	Fuel line pressure	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
02	2	differential, psid Standard deviation	(h)	(h)	(b)	(h)	(b)	(h)	(h)	(b)	(b)
03		Fuel injector differ-	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
		ential pressure, psid	` ,	` ,	` ,	` '	` '	` ,	` ,	` '	` ,
03	3	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
09		Present fuel flow,	35.6	55.3	73.8	57.5	72.5	69.2	59.8	58.6	42.9
		lb/hr									
09		Standard deviation	13.9	19.0	5.8	7.8	5.3	5.0	33.6	10.8	6.4
09:		Fuel flow time, sec	1069	791	627	626	592	498	687	853	970
09: 094		Standard deviation Previous fuel flow, lb/hr	(a) 40.8	(a) 52.6	(a) 70 . 6	(a) 54.5	(a) 71.9	(a) 71.9	(a) 49.4	(a) 55.8	(a) 41.2
094		Standard deviation	4.4	3.4	3.1	3.3	4.0	6.3	1.6	14.4	2.2
09		Accumulated fuel, 1b	454	718	145	427	819	241	354	776	280
09	5	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100		Fuel flow indicated value	0	0	23	46	(b)	, 0	. 0	(b)	,46
100		Standard deviation	(b)	(b)	(a)	(a)	(b)	(p)	(b)	(b)	(a)
174		Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
17		Standard deviation	(b)	(b)	(b)	(b)	(þ)	(b)	(b)	(p)	(b)
179		Fuel flow time, sec	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
17: 17:		Standard deviation Previous fuel flow,	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		1b/hr									
170 171		Standard deviation	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
		Accumulated fuel flow, lb	(b)			•		(b)	(b)	(b)	(b)
17		Standard deviation	(b)	(b)	(b)	(p)	(p)	(b)	(b)	(p)	(b)
298	8	Present fuel flow, lb/hr	42.5	53.3	71.5	55.3	69.5	73.3	50.6	55.4	42.2
298	8	Standard deviation	4.4	3.6	1.5	3.9	6.2	2.6	3.5	2.3	2.1
C00	6	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13	0.06	0.06	0.06	0.06
CO		Standard deviation	0	0	0	0	0	0	0		0
	*	The state of the s		The second second second							

)94	Standard deviation	4.4	~~3.4~	3:1			•		776	
)95	Accumulated fuel, 1b	454	718	145	427	819	241	354	776	280
	95	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	.00	Fuel flow indicated value	0	0	23	46	(b)	(-)	(1)	(b)	46
	.00	Standard deviation	(b)	(b)	(a)	(a)	(b)	(b)	(b)	(b)	(a)
	.74	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	.74	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	.75	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	.75	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1	.76	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	.76	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1	.77	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1	.77	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
2	298	Present fuel flow, lb/hr	42.5	53.3	71.5	55.3	69.5	73.3	50.6	55.4	42.2
2	298	Standard deviation	4.4	3.6	1.5	3.9	6.2	2.6	3.5	2.3	2.1
C	06	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13	0.06	0.06	0.06	0.06
	06	Standard deviation	0	0	0	0	0	0	0	0	0
C	:07	Coal flow rate, lb/hr	37.7	47.3	63.4	49.0	61.7	69.0	47.6	52.1	39.8
(07	Standard deviation	3.9	3.2	1.3	3.5	5.5	2.5	3.3	2.1	2.0
C	800	Sorbent flow rate, lb/hr	4.8	6.0	8.1	6.2	7.8	4.3	3.0	3.2	2.5
(800	Standard deviation	0.5	0.4	0.2	0.4	0.7	0.2	0.2	0.1	0.1
	05	Fuel flow rate, lb/hr	42.5	53.3	71.5	55.3	69.5	73.3	50.6	55.4	42.2
	05	Standard deviation	4.4	3.6	1.5	3.9	6.2	2.6	3.5	2.3	2.1
(213	Input calcium-sulfur ratio	0.73	0.73	0.73	0.73	0.73	0.35	0.35	0.35	0.35
(213	Standard deviation `	0	0	0	0	0	0	0	0	0

 $^{\text{a}}\text{The}$ data or results obtained are obviously in error. $^{\text{b}}\text{D}$ ata or results were not obtained.

FOLDOUT FRAME

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TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	` '			•						
Data	Parameter					Test				
chan- nel		К1	К3	K4	K2	K7	K8	K6	K5	К9
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	163 19 (a) 21 3	138 34 (a) 18 6	209 60 (a) 27 10	148 16 (a) 17 1	152 35 (a) 9 3	168 24 (a) 10 2	187 64 (a) 11 5	292 48 (a) 18 4	126 80 (a) 8 21
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 184 22	(a) 156 25	(a) 237 38	(a) 165 18	(a) 162 19	(a) 179 29	(a) 199 27	(a) 310 42	(a) 134 27
006 014	Standard deviation Fuel injector differ- ential pressure, psid	0.97	(p)	(b)	(b)	1 (b)	(b)	0 (b)	(p)	(p)
014 022	Standard deviation Fuel injector line temperature, °F	0.44 (b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b) (b)
022 022	Standard deviation Fuel line pressure differential, psid	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
022 033	Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
033 092	Standard deviation Present fuel flow, 1b/hr	(b) 53.9	(b) 53.2	(b) 78.0	(b) 43.3	(b) 39.7	(b) 54.8	(b) 50.6	(b) 71.3	(b) 52.0
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	18.2 1180 (a) 44.6 3.2 127 (a) 46 0 (b)	7.7 793 (a) 51.1 1.7 243 (a) 46 0 (b)	15.4 369 (a) 65.4 5.0 465 (a) (b) (b)	4.2 932 (a) 42.4 3.1 711 (a) (b) (b)	4.0 1334 (a) 39.2 1.0 897 (a) 46 0 (b)	5.0 849 (a) 50.6 1.9 106 (a) (b) (b)	6.8 672 (a) 47.8 1.3 339 (a) (b) (b)	8.7 848 (a) 70.5 5.7 608 (a) 46 0 (b)	9.5 575 (a) 51.4 3.0 787 (a) 46 0 (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 45.4	(b) 50.8	(b) 67.9	(b) 41.4	(b) 39.4	(b) 50.7	(b) 48.1	(b) 67.3	(b) 53.5
298 C06 C06 C07	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr	2.8 0.13 0 40.2	1.4 0.13 0 44.9	9.3 0.13 0 60.1	2.6 0.12 0 37.1	0.8 0.06 0 37.1	2.3 0.06 0 47.8	1.8 0.06 0 45.3	2.5 0.06 0 63.4	5.3 0.06 0 50.4

095 095	oodiiid id Lett i i i i i i i i i i i i i i i i i i	3. 12					.0 1.	9 1.	3 5.	5 51.4
100	Sidnoard deviation	(a					97 1c			_ 0.0
100	. We'l INCHESTED WE'LL	. 4	_ `	_ `		a) (a) (a	ı) (a		, ,,,
174	Scalludry deviation			٠, ١, ١			46 (Ъ	d) (b		
±/ T	. , escile ruel Tiow	(b				b)	0 (b			6 46 0 0
174	1b/hr	` -	, (5) (E	ו) (ו	b) (Ł	o) (b) (b		
175	O GRIDGI II DEVIATION	(b) (b) (b	.) /				, (.2	, (b)
175	Fuel flow time, sec	(b)) (b) (b)) (b)
176	Standard deviation	(b)) (b		()~	; , ~			(b)	
	Previous fuel flow, lb/hr	(b)			<i>(</i>)~		, , ~ ,	· · · · /	(b)	
176	Standard deviation	-	` '	(5) (ь) (ь) (b)	(b)	(b)	
177	Accumulated fuel flow,	(b)	(b)	(b) (b	1 /6	٠ ، ،		•	(-)
	1b	(b)	(b)					, - /	(b)	(b)
177	Standard deviation			(-)	, (5	<i>)</i> (b)) (b)	(b)	(b)	(b)
298	Present fuel flow,	(b)	(b)	(b)	(b) (b)	/			
	חון/טו	45.4	50.8	67 . 9	41.4	39.4	(b) 50.7	(b)	(b)	(b)
298	Standard deviation	0 0	_		•	. 55.4	50.7	48.1	67.3	53.5
C06	Sorbent-coal ratio	2.8	1.4	9.3	2.6	0.8	2.3	1 0	•	
C06	Standard deviation	0.13	0.13	0.13	0.12				2.5	5.3
C07	coal flow rate. 16/hr	0	0	0	0			0.06	0.06	0.06
C07	Stalldard deviation	40.2	44.9	60.1	37.1		47.8	0 45.3	0	_ 0
C08	Sorbent flow rate,	2.5	1.2	8.2	2.9		2.2		63.4	50.4
000	ID/nr	5.2	5.8	7.8	4.3		2.9	1.7	2.4	5.0
C08	Standard deviation	0 1					2.9	2.8	3.9	3.1
C05	ruel flow rate. 16/hr	0.3	0.2	1.1	0.8	0	0.1	0.1	0 1	
C05	Standard deviation	45.4 2.8	50.8	67.9	41.4	39.4	50.7	48.1	0.1	0.3
C13	Input calcium-sulfur	1.39	1.4	9.3	2.6	0.8	2.3	1.8	67.3	53.5
C12	ratio	1.39	1.40	1.40	1.28	0.66	0.66	0.66	2.5	5.3
C13	Standard deviation	0	0	_				0.00	0.66	0.66
aThe d	ata on normal	U	0	0	0.28	0.01	0	0	0.01	Ω

^aThe data or results obtained are obviously in error. ^bData or results were not obtained.

FOLDOUT FRAME

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TABLE 4. - Continued.

Data								
Data	Parameter				Test			
chan- nel		K10	K12	К11	K14	K13	K15	K16
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	92 0 (b) 18 0	196 39 (a) 39 10	268 64 (a) 54 17	180 22 (a) 36 6	88 48 (a) 18 8	127 48 (a) 17 3	58 0 (b) 8 0
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(b) 110 32	(a) 236 27	(a) 322 48	(a) 217 29	(a) 106 19	(a) 144 26	(b) 66 25
006 014	Standard deviation Fuel injector differ- ential pressure, psid	0 (b)	(b)	0 (b)	0 (b)	(b)	0 (b)	(b)
014 022	Standard deviation Fuel injector line	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
022 022	temperature, °F Standard deviation Fuel line pressure	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)
022 033	differential, psid Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
033 092	Standard deviation Present fuel flow, 1b/hr	(b) 52.9	(b) 63.8	(b) 89.3	(b) 54.8	(b) 55.5	(b) 50.2	(b) 42.9
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	1.3 1094 (a) 52.5 1.3 205 (a) (b) (b)	28.9 843 (a) 52.8 2.0 433 (a) 23 (a) (b)	27.9 531 (a) 80.0 3.4 782 (a) 46 0 (b)	8.7 1096 (a) 54.0 4.0 208 (a) (b) (b)	37.9 919 (a) 41.1 2.0 345 (a) 46 0 (b)	7.6 740 (a) 47.9 3.3 562 (a) (b) (b)	0.9 1101 (a) 43.1 1.1 703 (a) 45 1 (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)
176 177	lb/hr Standard deviation Accumulated fuel flow,	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
177 298	1b Standard deviation Present fuel flow,	(b) 54.6	(b) 52.4	(b) 80.1	(b) 52.7	(b) 41.0	(b) 46.9	(b) 43.9
298 C06 C06 C07	1b/hr Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, 1b/hr	1.2 0.20 0 45.5	2.2 0.20 0 43.7	6.6 0.20 0 66.8	1.6 0.20 0 43.9	2.6 0.20 0 34.2	3.8 0.13 0 41.5	0.4 0.13 0 38.8

094 095	Accumulated fuel, lb	1.3	2.0					
095	Standard deviation	205 (a)	433 (a)	782	208	345	562	703
100	Fuel flow indicated value	(b)	23	(a) 46	(a) (b)	(a) 46	(a)	(a)
100	Standard deviation	(b)	(a)	0	(b)	0	(b) (b)	45 1
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(p)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(þ)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, lb	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	54.6	52.4	80.1	52.7	41.0	46.9	43.9
298	Standard deviation	1.2	2.2	6.6	1.6	2.6	3. 8	0.4
C06	Sorbent-coal ratio	0.20	0.20	0.20	0.20	0.20	0.13	0.13
C06	Standard deviation	0	0	0	0	0	0	0
C07	Coal flow rate, 1b/hr	45.5	43.7	66.8	43.9	34.2	41.5	38.8
C07	Standard deviation	1.0	1.9	5.5	1.3	2.2	3.3	0.3
C08	Sorbent flow rate, lb/hr	9.1	8.7	13.4	8.8	6.8	5.4	5.1
C08	Standard deviation	0.2	0.4	1.1	0.2	0.4	0.4	0
C05	Fuel flow rate, lb/hr	54.6	52.4	80.1	52.7	41.0	46.9	43.9
C05	Standard deviation	1.2	2.2	6.6	1.6	2.6	3.8	0.4
C13	Input calcium-sulfur ratio	2.16	2.16	2.18	2.17	2.16	1.42	1.42
C13	Standard deviation	0	0	0	0	0	0	0

 $^{\rm a}{\rm The}$ data or results obtained are obviously in error. $^{\rm b}{\rm Data}$ or results were not obtained.



TABLE 4. - Continued.

Data	Parameter		•	Γest		
chan-	i di dile eçi	0.4.5.0			0400	CACA
nel		CAS0	CAS1	CAS2	CAS3	CAS4
001	Coal consumed, 1b	1030	866	1200	2100	1260
002	Coal meter screw value	, 95	, 95	,52	28	, 28
002	Standard deviation	(a)	(a)	(a)	(a)	(a)
003 004	Sorbent consumed, 1b Sorbent meter screw	133 16	112 12	155 9	267 6	161 4
004	value	10	14	,	Ū	7
004	Standard deviation	(a)	(a)	(a)	(a)	(a)
005	Fuel consumed, 1b	1170	979	1360	2370	1420
006	Fuel meter screw	22	29	23	14	15
006	value Standard deviation	(a)	(a)	(a)	(a)	(a)
014	Fuel injector differ-	(b)	(b)	(b)	5.02	3.73
0	ential pressure,	(-/	(~)	(-)		
	psid					_
014 022	Standard deviation	(b) (b)	(b) (b)	(b) (b)	2.74 (b)	(b)
022	Fuel injector line temperature, °F	(D)	(10)	(0)	(0)	(b)
022	Standard deviation	(b)	(b)	(b)	(b)	(b)
022	Fuel line pressure	(b)	(b)	(b)	(b)	(b) (b)
000	differential, psid	/	(1.)	(1.)	(1.)	71.5
022 033	Standard deviation Fuel injector differ-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
033	ential pressure,	(6)	(0)	(0)	(6)	(n)
	psid					
033	Standard deviation	(b)	(b)	(b)	(b)	(b)
092	Present fuel flow,	48.3	75.8	50.9	39.5	39.3
092	lb/hr Standard deviation	24.0	35.8	14.3	27.4	19.5
093	Fuel flow time, sec	1179	734	794	1137	1135
093	Standard deviation	(a)	(a)	(a)	(a)	(a)
094	Previous fuel flow, lb/hr	45.8	72.3	49.1	34.8	38.4
094 095	Standard deviation	21.5 492	31.2 445	24.9 414	19.7 463	23.9 404
095	Accumulated fuel, 1b Standard deviation	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	(a)	(a)	(a)	(a)	(a)
100	Standard deviation	(b)	(b)	(b)	(b)	(b)
174	Present fuel flow,	(b)	(b)	(b)	(b)	(b)
174	lb/hr Standard deviation	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow,	(b)	(b)	(b)	(b)	(b)
176	1b/hr	/5)	/ b.\	/h\	(b)	(b.)
176 177	Standard deviation Accumulated fuel flow,	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
	1b.	(~)	(5)	(5)	(=)	•
177	Standard deviation	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow,	42.0	60.7	44.7	68.0	64.2
298	lb/hr Standard deviation	4.3	7.5	7.1	43.9	35.6
C06	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13

094	Standard deviation	21.5		24.9	19.7	
095	Accumulated fuel, 1b	492	445	414	463	404
095	Standard deviation	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	(a)	(a)	(a)	(a)	(a)
100	Standard deviation	(b)	(b)	(b)	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	42.0	60.7	44.7	68.0	64.2
298	Standard deviation	4.3	7.5	7.1	43.9	35.6
C06	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13
C06	Standard deviation	0	0	0	0	0
C07	Coal flow rate, 1b/hr	37.3	53.8	39.6	35.0	34.8
C07	Standard deviation	3.8	6.6	6.3	24.3	17.3
C08	Sorbent flow rate, lb/hr	4.8	7.0	5.1	4.4	4.5
C08	Standard deviation	0.5	0.9	0.8	3.1	2.2
C05	Fuel flow rate, lb/hr	42.0	60.7	44.7	39.5	39.3
C05	Standard deviation	4.3	7.5	7.1	27.4	19.5
C13	Input calcium-sulfur ratio	2.00	1.40	2.01	1.98	2.00
C13	Standard deviation	0.01	0.01	0.01	0.02	0.03

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

	(a) Continued. –	Combus	stor 11	iput so	olids d	lata			
Data chan-	Parameter				Te	st			
nel		T3A	ТЗВ	T'3C	T3D	T3D	T3F	T4	T5
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	332 22 (a) 51 2	1150 20 (a) 140 4	914 21 (a) 109 4	891 49 (a) 108 5	2390 30 (a) 288 6	315 95 (a) 36 9	1060 44 (a) 128 5	652 53 (a) 85 8
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a) 383 15	(a) 1290 15	(a) 1020 12	(a) 1000 20	(a) 2680 20	(a) 351 13	(a) 1190 32	(a) 737 24
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) 5.16	(a) 0:37
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	2.49 (b)	(b)
022 022	Standard deviation Fuel line pressure differential, psid	(b) 0.14	(b) 4.56	(b) 30.0	(b) 22.5	(b) 0.16	(b) 0.15	(b) 0.14	(b) 0.29
022 033	Standard deviation Fuel injector differential pressure, psid	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	0 (b)	0 (b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 34.3	(b) 33.5	(b) 34.2	(b) 42.5	(b) 45.7	(b) 43.9	(b) 64.1	(b) 65.5
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow,	(a) 1070 (a) 39.9 (a) 233 (a) 39 (a) (b)	(a) 984 (a) 31.7 (a) 503 (a) 37 (a) (b)	(a) 905 (a) 30.2 (a) 490 (a) 29 (a) (b)	(a) 927 (a) 38.9 (a) 649 (a) 38 (a) (b)	(a) 1032 (a) 38.7 (a) 555 (a) 34 (a) (b)	(a) 352 (a) 42.6 (a) 143 (a) 43 (b)	(a) 821 (a) 56.2 (a) 436 (a) (b) (b)	(a) 435 (a) 58.3 (a) 378 (a) (b) (b)
174 175 175 176	lb/hr' Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) 59.2	(b) 58.4	(b) 56.3
298 C06 C06	Standard deviation Sorbent-coal ratio Standard deviation	(b) 0.15 0.	(b) 0.12 0.01	(b) 0.12 0 .	(b) 0.12 0	(b) 0.12 0	(a) 0.12 0	18.7 0.12 .0.02	9.9 0.13

094	Standard deviation	(a)	(a)	(ā)	(a)	(a)	(a)	(a)	
095	Accumulated fuel, 1b	233	503	490	649	555	143	436	378
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	,39	.37	29	.38	34	43	(b)	(b)
100	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(b)	(b)
174	Present fuel flow, lb/hr'	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(a)	(a)	(a)	(a)	(a)	59.2	58.4	56.3
298	Standard deviation	(b)	(b)	(b)	(b)	(b)	(a)	18.7	9.9
C06	Sorbent-coal ratio	0.15	0.12	0.12	0.12	0.12	0.12	0.12	0.13
C06	Standard deviation	0	0.01	0	0	0	0	0.02	0
C07	Coal flow rate, 1b/hr	29.8	29.8	30.6	37.9	40.8	39.4	52.1	49.8
C07	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	16.4	8.8
C08	Sorbent flow rate, lb/hr	4.6	3.7	3.6	4.6	4.9	4.6	6.3	6.5
C08	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	2.5	1.1
C05	Fuel flow rate, lb/hr	3À.Ś	33.5	3 4. 2	42 . 5	4 5 .7	43.9	58.4	56.3
C05	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	18.7	9.9
C13	Input calcium-sulfur ratio	2.39	1.91	1.84	1 . 88	1 . 90	1 . 8Ó	0.67	1.41
C13	Standard deviation	0.03	0.13	0.06	0.04	0.06	0.01	0.13	0.01

 $^{\rm a}{\rm The}$ data or results obtained are obviously in error. $^{\rm b}{\rm Data}$ or results were not obtained.

FOLDOUT FRAME 2

2

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

Data chan-	Parameter				To	est			
ne1		L1	L2	L3	L4	L5	L6	M1	M2
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	334 54 (a) 42 16	166 35 (a) 21 16	225 30 (a) 29 16	362 41 (a) 46 16	447 73 (a) 27 8	91 0 (a) 5 (b)	127 16 (a) 17	71 0 (a) 9 0
004 005 006	Standard deviation Fuel consumed, 1b Fuel meter screw value	0 377 30	0 187 16	0 254 25	0 408 40	0 473 41	(b) 97 24	(a) 144 8	0 81 3
006	Standard deviation Fuel injector differential pressure, psid	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(a) (b)	(b) (b)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
022 022	Standard deviation Fuel line pressure	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
022 033	differential, psid Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 59.9	(b) 40.4	(b) 53.0	(b) 73.8	(b) 67.1	(b) 45.9	(b) 23.9	(b) 19.9
092 093 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	3.8 691 (a) 61.9 5.5 292 (a) (b) (b)	8.8 1107 (a) 37.0 3.7 578 (a) (b) (b)	6.6 737 (a) 52.7 6.5 855 (a) (b) (b)	4.6 652 (a) 76.1 8.1 272 (a) (b) (b)	6.0 678 (a) 66.9 8.4 745 (a) 46 0 (b)	1.4 1195 (a) 50.5 3.0 163 (a) (b) (b)	2.3 2087 (a) 24.3 0.8 154 (a) 46 0 (b)	5.0 2604 (a) 18.1 1.7 334 (a) (b) (b) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)
176 177	1b/hr Standard deviation Accumulated fuel flow, 1b	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 97.5	(b) 76.2	(b) 110.3	(b) 121.9	(b) 103.4	(b) 54.6	(b) 26.8	(b) 25.1
298 C06 C06	Standard deviation Sorbent-coal ratio Standard deviation	0.13	59.1 0.13 0 35.8	0.13 0 47.0	45.8 0.13 0 65.5	0.06 0	8.7 0.06 0 43.3	2.9 0.13 0 21.2	0 17.6

095 095 100	Accumulated fuel, 1b Standard deviation Fuel flow indicated value	5.5 292 (a) (b)	578 (a)	855 (a)	272 (a)	745 (a)	163 (a)	154 (a)	334 (a)
100 174	Standard deviation Present fuel flow, lb/hr	(b) (b)		(b) (b)	(b) (b) (b)	46 0 (b)	(b) (b)	46 0 (b)	(\tilde{b})
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b)
176 177	<pre>lb/hr Standard deviation Accumulated fuel flow, lb</pre>	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 97.5	(b) 76.2	(b) 110.3	(b) 121.9	(b) 103.4	(b) 54.6	(b) 26.8	(b) 25.1
298 C06 C06 C07 C07 C08	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation Sorbent flow rate,	42.1 0.13 0 53.2 3.3	59.1 0.13 0 35.8 7.8	47.8 0.13 0 47.0 5.9	45.8 0.13 0 65.5 4.1	43.9 0.06 0 63.3 5.6	8.7 0.06 0 43.3 1.3	0.13 0 21.2	Ō
C08 C05 C05 C13	lb/hr Standard deviation Fuel flow rate, lb/hr Standard deviation Input calcium-sulfur	6.8 0.4 60.0 3.8 1.38	4.6 1.0 40.4 8.8 1.39	6.0 0.7 53.0 6.6 1.38	8.3 0.5 73.8 4.6 1.38	3.8 0.3 67.1 6.0 0.65	2.6 0.1 45.9 1.4 0.65	0.3 23.9	5.0
C13	ratio Standard deviation	0.01	0.01	0.01	0.01	0.01	0	0	0

 $^{\text{a}}\text{The data}$ or results obtained are obviously in error. $^{\text{b}}\text{Data}$ or results were not obtained.

TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

Data chan- nel	Parameter					Test				
nel										
001		M3	M4	M5	M6	M7	M8	M9	M11	M12
001 002 002 003 004	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	95 97 0 12 4	194 92 6 25 4	196 97 0 11 3	110 (b) (b) 6 (b)	87 (b) (b) 5 (b)	60 96 0 3 8	167 96 0 33 11	162 96 0 32 25	150 96 0 30 20
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 107 7	(a) 219 18	(a) 207 18	(b) 117 7	(b) 93 3	(a) 64 9	(a) 201 9	(a) 195 5	(a) 181 18
006 014	Standard deviation Fuel injector differ- ential pressure, psid	1 (b)	(b)	(b)	0 (b)	1 (b)	(b)	1 (b)	1 (b)	(p)
014 022	Standard deviation Fuel injector line temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
022 022	Standard deviation Fuel line pressure differential, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
022 033	Standard deviation Fuel injector differ- ential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(p)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 24.6	(b) 41.2	(b) 40.5	(b) 23.5	(b) 17.4	(b) 22.8	(b) 29.1	(b) 27.9	(b) 45.2
092 093 093 094 094 095 095	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value	2.1 1898 (a) 21.0 3.4 461 (a) (b)	5.4 1032 (a) 37.9 4.5 663 (a)	6.6 1220 (a) 37.6 1.4 902 (a) (b)	1.1 2538 (a) 29.5 8.0 75 (a)	2.5 1891 (a) 17.2 1.8 207 (a) (b)	6.6 1199 (a) 28.3 6.8 307 (a) (b)	18.2 1186 (a) 29.9 18.5 449 (a)	3.4 1503 (a) 32.0 12.0 650 (a)	6.0 990 (a) 40.6 4.4 895 (a)
100 174	Standard deviation Present fuel flow, lb/hr	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, 1b/hr	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(p)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
177 298	Standard deviation Present fuel flow, lb/hr	(b)	(b) 72.4	(b) 81.0	(b) 26.6	(b) 23.7	(b) 58.3	(b) 32.9	(b) 66.3	(b) 61.5
298 C06 C06 C07	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation	(b) 0.13 0 21.8 1.9	52.2 0.13 0 36.6 4.7	79.5 0.06 0 38.3 6.2	1.5 0.06 0 22.2 1.1	0 0.06 0 16.4 2.4	55.7 0.06 0 21.6 6.2	7.6 0.20 0 24.3 15.2	81.7 0.20 0 23.3 2.9	19.8 0.20 0 37.7 5.0

094	Standard deviation	3.4		1:4					"TZ.U	4.4
095	Accumulated fuel, 1b	461	663	902	75	207	307	449	650	895
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	(b)	(p)	(b)	(b)	(b)	(b)	46	(b)	(b)
100	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	0	(b)	(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	(b)	72 . 4	8ì.Ó	26.6	23.7	58.3	32.9	66.3	61.5
298	Standard deviation	(b)	52.2	79.5	1.5	0	55.7	7.6	81.7	19.8
C06	Sorbent-coal ratio	0.13	0.13	0.06	0.06	0.06	0.06	0.20	0.20	0.20
C06	Standard deviation	0	0	0	0	0	0	0	0	0
C07	Coal flow rate, 1b/hr	21.8	36.6	38.3	22.2	16.4	21.6	24.3	23.3	37.7
C07	Standard deviation	1.9	4.7	6.2	1.1	2.4	6.2	15.2	2.9	5.0
C08	Sorbent flow rate, lb/hr	2.8	4.6	2.2	1.3	1.0	1.2	4.8	4.6	7.5
C08	Standard deviation	0.2	0.7	0.4	0.1	0.1	0.3	3.0	0.6	1.0
C05	Fuel flow rate, lb/hr	24.6	41.2	40.5	23.5	17.4	22.8	29.1	27.9	45.2
C05	Standard deviation	2.1	5.4	6.6	1.1	2.5	6.6	18.2	3.4	6.00
C13	Input calcium-sulfur ratio	1.41	1.36	0.63	0.63	0.63	0.62	2.16	2.16	2.16
C13	Standard deviation	0	0.04	0	0	0	0.01	0.01	0.01	0.01



TABLE 4. - Continued.

(a) Continued. - Combustor input solids data

Data	Parameter				Т	est			
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
001 002 002 003 004	Coal consumed, 1b Coal meter screw value Standard deviation Sorbent consumed, 1b Sorbent meter screw value	288 31 (a) 37 5	235 64 (a) 31 11	161 41 (a) 21 7	134 29 (a) 18 5	110 24 (a) 14 4	212 30 (a) 28 11	181 83 (a) 24 16	48 96 0 6 16
004 005 006	Standard deviation Fuel consumed, lb Fuel meter screw value	(a) 326 22	(a) 266 18	(a) 183 20	(a) 152 15	(a) 125 9	(a) 240 16	0 205 14	0 54 3
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	(b)	6 (b)	(b)	(b)	1 (b)	(b)	(b)
014 022	Standard deviation Fuel injector line temperature, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
022 022	Standard deviation Fuel line pressure	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
022 033	<pre>differential, psid Standard deviation Fuel injector differ- ential pressure, psid</pre>	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
033 092	Standard deviation Present fuel flow, lb/hr	(b) 36.1	(b) 37.1	(b) 45.2	(b) 36.3	(b) 23.2	(b) 33.4	(b) 43.8	(b) 19.7
092 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	13.6 1175 (a) 34.7 4.7 228 (a) (a) (b) (b)	10.6 1404 (a) 33.5 1.4 536 (a) (a) (b)	27.7 1249 (a) 32.7 1.1 761 (a) (a) (b) (b)	16.2 1327 (a) 33.0 1.3 739 (a) (a) (b) (b)	6.4 2008 (a) 24.3 4.0 87 (a) (a) (b) (b)	4.8 1230 (a) 34.6 3.3 310 (a) 46 0 (b)	39.5 1152 (a) 33.8 1.6 545 (a) (a) (b)	2.9 1490 (a) 20.6 6.1 702 (a) (a) (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow,	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)
176 177	<pre>lb/hr Standard deviation Accumulated fuel flow, lb</pre>	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
177 298	Standard deviation Present fuel flow, lb/hr	(b) 34.9	(b) 32.7	(b) 34.5	(b) 33.9	(b) 23.3	(b) 34.4	(b) 33.7	(b) 19.6
298 C06 C06 C07	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr Standard deviation	5.9 0.13 0 30.9	3.2 0.13 0 28.9	5.9 0.13 0 30.5	0 30.0	4.1 0.13 0 20.6	2.1 0.13 0 30.4	1.5 0.13 0 29.8	2.5 0.13 0 17.4

034	Scandard deviation	4.7	1.4	1.1	1.3	4.0	3.3	1.6	6.1
095	Accumulated fuel, 1b	228	536		739				702
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	(a)	(a)	(a)	(a)	(a)	46		(a)
100	Standard deviation	(b)	(b)	(\tilde{b})	(Ď)	(b)	0		(b)
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(6)	/ L \	/ []	71.5
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
176	Standard deviation	(b)	(b)	(b)	(b)	/ L\	/ L\	(1.3	
177	Accumulated fuel flow,	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
177	Standard deviation	(b)	(b)	/ b\	/h\	/ L \	71.3		
298	Present fuel flow, lb/hr	34.9	32.7	(b) 34.5	(b) 33.9	(b) 23.3	(b) 34.4	(b) 33.7	(b) 19.6
298	Standard deviation	5.9	3.2	5.9	A F	4 1	0.1	4 -	
C06	Sorbent-coal ratio	0.13	0.13	0.13	4.5	4.1	2.1	1.5	2.5
C06	Standard deviation	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
C07	Coal flow rate, 1b/hr	30.9	28.9	30.5	30.0	0	0	0	0
C07	Standard deviation	5.2	2.8	5.2		20.6	30.4	29.8	17.4
C08	Sorbent flow rate,	4.0	3.7	4.0	3.9	3.6	1.9	1.3	2.2
	1b/hr	7.0	3.7	4.0	3.9	2.6	4.0	3.9	2.2
C08	Standard deviation	0.7	0.4	0.7	0.5	0.5	0 0	0 0	
C05	Fuel flow rate, lb/hr	34.9	32.7	34.5	33.9	0.5 23.3	0.2	0.2	0.3
C05	Standard deviation	5.9	3.2	5.9	4.5	4.1	34.4	33.7	19.6
C13	Input calcium-sulfur ratio	2.01	2.02	2.04	2.03	1.99	2.1 2.03	1.5 2.02	2.5 2.01
C13	Standard deviation	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0

TABLE 4. - Continued.

(a) Concluded. - Combustor input solids

Data chan-	Parameter				Test			
nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
001	Coal consumed, lb Coal meter screw value Standard deviation Sorbent consumed, lb Sorbent meter screw value	903	790	2820	2580	2320	2140	1910
002		96	34	32	72	38	72	83
002		0	(a)	(a)	(a)	(a)	(a)	(a)
003		119	101	371	333	302	277	249
004		8	6	6	13	6	10	12
004	Standard deviation Fuel consumed, 1b Fuel meter screw value	(a)	(a)	(a)	(a)	(a)	(a)	(a)
005		1020	892	3190	2910	2630	2410	2160
006		18	16	16	17	20	20	22
006 014	Standard deviation Fuel injector differ- ential pressure, psid	(b)	5 (b)	1 (b)	3 (b)	5 17.11	3 17.49	2 20.63
014 022	Standard deviation Fuel injector line temperature, °F	(b) (b)	(b)	(b) (b)	(b)	2.13 (b)	1.05 (b)	3.00 (b)
022	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
022	Fuel line pressure	0.23	0.13	0.09	0.12	2.06	0.20	(b)
022	differential, psid Standard deviation Fuel injector differ- ential pressure, psid	0.21	0.04	0.08	0.13	1.63	0.24	(b)
033		(b)	(b)	(b)	(b)	(b)	(b)	(b)
033	Standard deviation Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092		41.0	39.9	39.9	37.7	38.0	42.3	40.1
092 093 094 094 095 095 100 100	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, lb/hr Standard deviation Accumulated fuel, lb Standard deviation Fuel flow indicated value Standard deviation Present fuel flow, lb/hr	18.5 1189 (a) 36.0 12.2 478 (a) 39 (a) (b)	22.5 1172 (a) 34.0 6.8 433 (a) 43 (a) (b)	23.0 1238 (a) 37.5 19.3 486 (a) 0 (a) (b)	18.8 1172 (a) 36.5 12.1 493 (a) 46 1 (b)	18.5 1154 (a) 36.6 12.6 459 (a) 38 (a) (b)	19.5 1070 (a) 38.7 11.7 517 (a) 23 (a) (b)	17.8 988 (a) 37.9 11.3 480 (a) 46 0 (b)
174 175 175 176	Standard deviation Fuel flow time, sec Standard deviation Previous fuel flow, 1b/hr	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)
176 177	Standard deviation Accumulated fuel flow, 1b	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
177	Standard deviation Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298		40.2	34.5	35.9	34.4	33.9	37.0	38.2
298	Standard deviation Sorbent-coal ratio Standard deviation Coal flow rate, lb/hr	10.2	5.7	5.9	5.5	8.2	5.9	19.8
C06		0.13	0.13	0.13	0.13	0.13	0.13	0.13
C06		0.02	0	0	0	0	0	0
C07		36.1	30.6	31.8	30.5	30.1	32.8	33.8

094	Standard deviation	12.2			12.1			****II*:3
095	Accumulated fuel, 1b	478	433	486	493	459	517	480
095	Standard deviation	(a)	(a)	(a)	(a)	(a)	(a)	(a)
100	Fuel flow indicated value	,39	43	, 0	46	,38	23	46
100	Standard deviation	(a)	(a)	(a)	. 1	(a)	(a)	0
174	Present fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
174	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
175	Fuel flow time, sec	(b)	(b)	(b)	(b)	(b)	(b)	(b)
175	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Previous fuel flow, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
176	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Accumulated fuel flow, 1b	(b)	(b)	(b)	(b)	(b)	(b)	(b)
177	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
298	Present fuel flow, lb/hr	40.2	34.5	35 . 9	34.4	33.9	37.0	38.2
298	Standard deviation	10.2	5.7	5.9	5.5	8.2	5.9	19.8
C06	Sorbent-coal ratio	0.13	0.13	0.13	0.13	0.13	0.13	0.13
C06	Standard deviation	0.02	0	0	0	0	0	0
C07	Coal flow rate, 1b/hr	36.1	30.6	31.8	30.5	30.1	32.8	33.8
C07	Standard deviation	15.9	5.0	5.2	4.8	7.3	5.2	17.5
C08	Sorbent flow rate, lb/hr	4.9	3.9	4.2	3.9	3.9	4.3	4.4
C08	Standard deviation	2.7	0.6	0.7	0.6	0.9	0.7	2.3
C05	Fuel flow rate, 1b/hr	41.0	34.5	35.9	34.4	33.9	37.0	38.2
C05	Standard deviation	18.5	5.7	5.9	5.5	8.2	5.9	19.8
C13	Input calcium-sulfur ratio	2.09	2.00	2.05	2.01	2.01	2.02	2.03
C13	Standard deviation	0.30	0.02	0.03	0.02	0.02	0.02	0.01

 $^{\mbox{\scriptsize a}}\mbox{\sc The data}$ or results obtained are obviously in error. $^{\mbox{\scriptsize b}}\mbox{\sc Data}$ or results were not obtained.

FOLDOUT FRAME

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FOLDOUT FRAME

TABLE 4. - Continued.

(b) Combustor input air system data

Data	Parameter					Test				
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
800	Air venturi pressure	4.52	4.35	4.51	4.54	4.54	4.99	4.96	4.51	4.53
008 009 009	differential, psid Standard deviation Air line pressure, psid Standard deviation	0.01 134 1	0.42 135 4	0.03 129 2	0.02 130 1	0.02 132 2	0.04 130 3	0.02 130 2	0.02 130 2	0.03 130 3
010 010	Air inlet temperature, °F Standard deviation	45 2 3.26	62 6	61 8 2.92	47 2 3.17	68 5 3.12	95 2 3.12	86 6 3.17	67 2 3.09	65 3 3.12
011 011	Fuel air venturi pressure differential, psid Standard deviation	0.07	2.93	0.08	0.20	0.08	0.20	0.11	0.14	0.26
012	Fuel air line pressure, psia	136	137	131	132	134	132	132	132	131
012 013	Standard deviation Fuel air inlet temperature, °F	1 47	4 65	2 63	1 50	2 72	3 99	2 89	2 70	3 68
013 015	Standard deviation Burner air venturi pressure differential, psid	3 0.08	6 0.07	9 0.14	3 0.13	5 0.11	0.15	5 0.15	0.18	4 0.18
015 016	Standard deviation Burner air pressure, psia	0.02 134	0.01 135	0.04 129	0.01 130	0.03 124	0.01 130	0.05 130	0.02 130	0.01 129
016 050	Standard deviation Reactor inlet air temperature, °F	1 60	4 66	2 67	1 54	28 61	3 88	2 85	2 66	3 63
050 054	Standard deviation Reactor grid air differential pressure, psid	0 3.06	3 2.79	5 2.98	3.21	4 2.99	2 16.8	5 15.6	10.6	1 11.9
054 055	Standard deviation Reactor internal pressure, psia	0.11 71.6	0.21 77.6	0.07 72.6	0.26 68.7	0.10 71.9	0.31 71.3	3.1 71.3	0.38 72.1	0.30 72.1
055 099	Standard deviation Air heater vent temperature, °F	0.2 83	3.3 86	1.1 86	5.7 77	0.6 84	0.1 96	0.1 102	0.2 88	0.2 173
099 131	Standard deviation Air heater combustor temperature, °F	3 65	1 73	3 73	1 62	3 74	5 92	1 98	3 86	149 130
131 148	Standard deviation Air heater inlet pressure, psia	3 134	2 135	5 129	1 130	3 133	4 130	2 130	3 130	77 130
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	0.02	4 0.04	0.06	0.04	0.05	0.18	0.13	0.17	3 0.86
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	(b)	0.01 (b)	0.01 (b)	0.01 (b)	0.01 (b)	0.07 (b)	(p)	0.01 (b)	1.21 (b)
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
0040	 Catalogue at the condition to the desired part of the property of the desired for the condition. 	and of the Land	Same of The Burn	وما معالياً من المحاليات المحاليات المحاليات المحاليات	The Control of the Co					

101	Scalingto nevigtion		3	1	3	1	Caracteristics	en sterribbindenski	数据的指的的数据	
131	Air heater combustor	69							1 3	
	temperature. °F	0.	, ,	J /	ა ხ	2 7	4 9	2 9	86 86	130
131	Standard deviation	3	2	2	c	4	_			
148	Air heater inlet	134						4	2 3	77
	pressure, psia	104	13:	5 129	9 13	0 13:	3 13	0 130	130	
148	Standard deviation	1			.	_				
149	Air heater venturi dif-	0.02		4 9 0.06	1 5 0.04	1 7	2 .	3 2	2 1	3
	ferential pressure,	0.02	0.04	· U.U	b 0.04	4 0.05	2 5 0.18	8 0.13	0.17	0.86
149	Standard deviation	^	0 01							
CO4A	Combustor airflow rate,	()					0.07	7 (0.01	1.21
	1b/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)		(b)
CO4A	Standard deviation	/ 6. \						, · · ,	(5)	(5)
CO4B	Burner airflow rate,	(b)	(b)			(b)	(b)	(b)	(b)	(b)
	lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	/ ៤ \	(1.)				. •	` ,	(-)	(2)
CO4C	Fuel airflow rate,	(b)	(b)	(b)	(b)		(b)	(b)	(b)	(b)
	lb/hr	(b)	. (b)	(b)	(b)	(b)	(b)		(b)	(b)
CO4C	Standard deviation	763					•	` ,	(-,	(5)
C04	Total airflow rate,	(b)	(b)	(b)	, ,		(b)	(b)	(b)	(b)
	1b/hr	582	564	565	574	564	573		565	569
C04	Standard deviation								000	303
C09	Reactor coal-air ratio	4	24	7	4	12	11	188	7	11
C09	Standard deviation	0.080	0.052	0.069	0.061	0.069	0.063	0.000	0 000	
C16	Reactor grid flow		0.020	UAULA	U.UIA	11 111 4	11 (11)(1	N 022	0 007	~ ~ ~ ~
•	coefficient	0.388	0.451	0.433	0.436	0.460	0.133	0.140	0.181	0.022 N 107
C16	Standard deviation									
	o sandar a deviation	0.024	0.015	0.006	0.015	0.008	0.002	0.002	0 000) 005

bData or results were not obtained.

(b) Continued. - Combustor input air system data

	` '		:		J				
Data	Parameter				-	Test			
chan- nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
800	Air venturi pressure	4.52	5.10	3.99	3.41	4.56	4.57	0.99	6.55
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.02 129.9 4.5 84 5 3.16	1.39 127.0 1.6 87 5 2.65	126.5 1.1 70 2	1.5 66 1	0.9 64 1	128.7 3.0 72 7	129.3 2.2 96 4	0.04 127.6 0.7 90 4 2.76
011	differential, psid Standard deviation	0 25	0.28	0 06	0 06	0.05	0.13	n n6	0.04
012	Fuel air line pressure,								129.2
012 013	Standard deviation Fuel air inlet temperature, °F	4.5 87	1.5 91	1.1 72		1.1 66	3.2 78	2.2 101	0.7 92
013 015	Standard deviation Burner air venturi pressure differential, psid	5 0.17		0.15		0.19	9 0.18		5 0.20
015 016	Standard deviation Burner air pressure,		3.21 126.7						0.04 127.5
016 050	psia Standard deviation Reactor inlet air temperature, °F	4.5 74	1.8 83	1.1 71	1.5 66	0.9 64	2.9 68	2.2 83	0.7 89
050 054	Standard deviation Reactor grid air differential pressure, psid	12.0	2 7 . 9	2 5.8	5.1	6.1	4 6.6		3 5.3
054 055	Standard deviation Reactor internal	0.3 72.2				0.2 63.0			0.1 79.4
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.2 437	11.3 380	0.1 373	0.1 358	0.1 394	0.1 407	0.4 334	0.2 490
099 131	Standard deviation Air heater combustor temperature, °F	6 269	65 265	33 268	31 252	41 266	41 272	23 237	33 334
131 148	Standard deviation Air heater inlet	5 130.0	45 126.1	10 126.6	5 126.9	3 130.0	3 129.4	13 129.4	4 127.4
148 149	pressure, psia Standard deviation Air heater venturi dif- ferential pressure, psid	3.3 1.97				1.0 2.31		2.0 2.21	0.8 3.27
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.05 (b)	0.46 (b)	0.13 (b)	0.05 (b)	0.09 (b)	0.16 (b)	0.12 (b)	0.13 (b)
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

	temperature, F	and a few restriction of the second section is a second second second second second second second second second	State of the second	east demind between	a Entire Control of Selection	en sonder skillete	existe medicion because,	THE PERSON NAMED IN	A PROPERTY OF THE PARTY OF THE
099	Standard deviation	6	65	33	31	. 41	. 41	23	33
131	Air heater combustor temperature, °F	269							
131	Standard deviation	5	45	10	5	; 3	3	1 2	1
148	Air heater inlet pressure, psia	130.0	126.1	126.6	126.9	130.0	129.4	13 129.4	4 127.4
148	Standard deviation	3.3	2.8	0.8	1.5	1.0	3.6	2.0	0.0
149	Air heater venturi dif- ferential pressure, psid	1.97							0.8 3.27
149	Standard deviation	0.05	0.46	0.13	0.05	0.09	0 16	0 10	0 10
CO4A	Combustor airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	0.16 (b)	0.12 (b)	0.13 (b)
CO4A	Standard deviation	(b)	(b)	(b)	(b)	/h\	/ 5 \	763	/1.3
C04B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(5)	/ b\	/ L \	/1.
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	/ L N	/ L \	71.
C04	Total airflow rate, lb/hr	560	606	520	494	568	(b) 565	(b) 325	(b) 634
C04	Standard deviation	12	67	3	6	3	^	2	~
C09	Reactor coal-air ratio	0.072	0 067	0 072	0 252	0 075	9	3	0 071
C09	Standard deviation	0.009	0.007	0.072	0.232	0.075	0.076	0.098	0.0/1
C16	Reactor grid flow coefficient	0.198	0.242	0.268	0.295	0.342	0.348	0.024	0.019
C16	Standard deviation	0.021	0.032	0.017	0.012	0.009	0.009	0.010	0.009

bData or results were not obtained.

FOLDOUT FRAME

TABLE 4. - Continued.

		(b) Continued Com	bustor	input	air sy	stem d	ata		
	Data chan-	Parameter				Test			
	nel		C1	C3	C8	C11	C12	C16	C17
	800	Air venturi pressure differential, psid	4.57	4.58	4.56	4.59	0.99	4.52	7.12
	008 009 009 010	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F	3.3 56	130.9 1.0 55	130.3 0.8 53	1.6 52	129.5 5.4 68	132.2 2.7 76	132.2 0.8 76
	010 011	Standard deviation Fuel air venturi pressure differential, psid		1 3.47			3 3.54		1 2.92
	011 012		0.25						
	012 013	Standard deviation Fuel air inlet temperature, °F	3.5 59		0.5 56		5.5 72	2.8 80	0.8 79
	013 015	Standard deviation Burner air venturi pressure differential, psid	0.15	0.14	2 0.14		3 0.16		1 0.16
	015 016	Standard deviation Burner air pressure, psia	0.01 132.3			0.03 131.4			
	016 050	Standard deviation Reactor inlet air temperature, °F	3.3 59	1.0 56			5.4 60	2.7 69	0.8 72
	050 054	Standard deviation Reactor grid air differential pressure, psid	2.11	0 2.10	2 1.88	1 1.99	3 0.88	2 2.35	2 2.33
	054 055	Standard deviation Reactor internal pressure, psia	0.24 69.5	0.05 63.2		0.05 72.6	0.08 40.1	0.16 54.6	0.11 80.7
	055 099	Standard deviation Air heater vent temperature, °F	6.8 97	0.2 384	0.2 377	0.1 322	0.6 331	3.6 428	0.1 503
	099 131	Standard deviation Air heater combustor temperature, °F	68 73	3 191	2 184	32 109	22 173	34 230	16 310
	131 148	Standard deviation Air heater inlet pressure, psia	12 132.4	130.9	130.3	28 131.3	7 129.3		37 132.0
	148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	3.2 0.50		0.8 0.44		5.6 0.37	2.6 0.74	0.7 2.60
	149 CO4A	Standard deviation Combustor airflow rate, lb/hr	(b)	0.01 (b)	0.01 (b)	0.07 (b)	0.04 (b)	0.31 (b)	1.64 (b)
	CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
naki, s	.C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

131	Air heater combustor	73	191	184	109	173	230	310
1.01	temperature, F	12	1	2	28	7	32	37
131	Standard deviation	122 /	120 0	120 2	131.3			
148	Air heater inlet pressure, psia							
148	Standard deviation	3.2	1.1	0.8	1.5	5.6	2.6	0.7
149	Air heater venturi dif- ferential pressure, psid	0.50	0.42	0.44	0.20	0.37	0.74	2.60
149	Standard deviation	0	0.01	0.01	0.07	0.04	0.31	1.64
CO4A	Combustor airflow rate, 1b/hr	(b)						
CO4A	Standard deviation	(b)						
CO4B	Burner airflow rate, lb/hr	(b)						
C04B	Standard deviation	(b)						
CO4C	Fuel airflow rate, lb/hr	(b)						
CO4C	Standard deviation	(b)						
C04	Total airflow rate, lb/hr	589	586	584	597	350	588	688
C04	Standard deviation	7				10	7	3
C09	Reactor coal-air ratio	0.056	0.069	0.063	0.075	0.096	0.060	0.055
C09	Standard deviation	0.012	0.027	0.008	0.025	0.021	0.005	0.008
C16	Reactor grid flow coefficient				0.804			
C16	Standard deviation	0.042	0.022	0.015	0.019	0.141	0.029	0.024

bData or results were not obtained.

		11 1 7	11.1.3	ULIJ	0.10	0.00	0.00	• • • • •	
1 1 100	Sorbent-Coal ratio	0.10	0.10	0		_	_	^	^
		0.10	^	Λ	Λ	(1)	(1	U	U
	Standard deviation	()	U	U	U	U	U	•	
C06	Standard deviduion	U	•				40-0	กา ก	17.6
COO	o canaar a a a a a a a a a a a a a a a a a	F 2 - 2	25.0	17 N	65 5	63.3	44.4	- 1/2 - 1/2 - 1	Adam Di
	C T FI A TALL WATER TO THE PROPERTY OF	e 300 miles	ಷ್ಟನ್ನಿ ⊾⊙ು		يبرولونه لألاب		A STATE OF THE PARTY		
and will do	Standard deviation Coal flow rate. 19/hr	With the second second		, , , , , , , , , , , , , , , , , , ,			1 2	7 7	77

FOLDOUT FRAME

TABLE 4. - Continued.

	(b) continued. – comi	oustor	mput	air sy	Stem a	ala		
Data chan-	Parameter				Test			
nel		D6	D7	D2	D1	D10	D3	D4
800	Air venturi pressure differential, psid	5.76	5.75	5.74	5.72	2.69	5.72	5.73
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, "F Standard deviation Fuel air venturi pressure differential, psid		2.3 67 1	126.1 2.3 81	1.7 69 2	126.3 3.8 62 1	132.7 2.2 74 8	124.6 2.4 84 4
011 012	Standard deviation Fuel air line pressure,			0.12 125.7				
012 013	psia Standard deviation Fuel air inlet temperature, °F	1.7 74	2.3 69		1.4 71	3.7 65	2.2 78	2.5 87
013 015	Standard deviation Burner air venturi pressure differential, psid	0.11		0.09	0.10		8 0.13	4 0.12
015 016	Standard deviation Burner air pressure, psia			0.01 126.3				0.02 124.7
016 050	Standard deviation Reactor inlet air temperature, °F	1.6 72			1.7 70	3.7 63	2.2 69	2.4 81
050 054	Standard deviation Reactor grid air differential pressure, psid	3 3.80		2.11		2 0.95	6 1.64	
054 055	Standard deviation Reactor internal	0.20 41.2			0.10 82.2		0.16 82.1	0.26 81.9
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.1 412	0.2 463	0.2 212	0.1 408	0.2 372	0.4 474	0.2 465
099 131	Standard deviation Air heater combustor temperature, °F	99 250	4 287	158 135	2 236	5 217	3 267	11 266
131 148	Standard deviation Air heater inlet pressure, psia	62 123.9		75 123.1	125.4	5 126.1	5 132.6	7 124.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1.7 2.44			1.7 1.33	3.8 1.55	2.2 1.45	2.6 1.29
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.37 (b)	0.04 (b)	0.55 (b)	0.04 (b)	0.07 (b)	0.09 (b)	0.09 (b)
C04A C04B	Standard deviation Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04B C04C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
C04C C04	Standard deviation Total airflow rate	(b) 5 98	(b)	(b)	(b)	(b)	(b)	(b)

1 dy 1 - 1 - 1 100 , 40 f	pressure, psia	TEURIS	**EEO	-TEO FI	-TC374	TS0.1	132.0	TZ474
148 149	Standard deviation	1.7						
	Air heater venturi dif- ferential pressure, psid	2.44	2.71	0.79	1.33	1.55	1.45	1.29
149	Standard deviation	0.37	0.04	0.55	0.04	0.07	0.09	0.09
CO4A	Combustor airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4A	Standard deviation	(b)	(b)	(b)	(h)	(b)	(b)	(b)
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	/ 6\	(b)	/ L N
CO4C	Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, 1b/hr	598	607	587	595	452	619	587
C04	Standard deviation	5	5	6	7	10	10	8
C09	Reactor coal-air ratio				0.044	0.049	0 066	0 057
C09	Standard deviation	0.013	0.006	0.013	0.004	0.005	0.000	0.037
C16	Reactor grid flow coefficient	0.351	0.522	0.457	0.628	0.669	0.815	0.582
C16	Standard deviation	0.027	0.035	0.038	0.029	0.059	0.046	0.160

bData or results were not obtained.

FOLDOUT FRAME

TABLE 4. - Continued.

, ,			a	33300				
				-	Γest			
, -	TB1A	TB1B	TB1C	TB1D	TD1E	TB1F	TB1G	ТВ1Н
Air venturi pressure	4.57	4.57	4.58	5.93	6.17	6.10	6.15	5.78
Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation	128.5 2.3 68 2	129.3 4.2 67 4	127.6 2.0 71 9	127.7 1.8 62 7	132.5 3.3 63 6	131.9 2.5 69 9	2.1 75 11	2.7 85 10
differential, psid								
Standard deviation Fuel air inlet temperature, °F	2.4 71				3.3 65	2.6 72	2.1 78	2.7 87
Standard deviation Burner air venturi pressure differential,				0.15			0.15	10 0.99
Standard deviation Burner air pressure,								
Standard deviation Reactor inlet air	2.3 69			1.8 64	3.3 61	2.5 65	2.0 73	2.7 81
Standard deviation Reactor grid air differential pressure,			7 3.05				7 0.98	
Standard deviation Reactor internal								
Standard deviation	4.4 86	4.1 327	2.9 385	0.1 390	3.9 467	3.5 454	0.2 456	15.7 406
Standard deviation Air heater combustor	8 79	132 181	45 210	134 221	12 275	95 230	13 267	129 238
Standard deviation Air heater inlet	3 127.9	58 128.8	21 127.0	72 127.4	16 132.2	85 131.6	9 132.2	64 132.8
Standard deviation Air heater venturi dif- ferential pressure,							2.1 1.58	2.7 2.12
Standard deviation Combustor airflow rate,	(b) (b)	0.13 (b)	0.22 (b)	0.70 (b)			0.20 (b)	6.55 (b)
A Standard deviation Burner airflow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
3 Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	Air venturi pressure differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid Standard deviation Fuel air line pressure, psia Standard deviation Fuel air inlet temperature, °F Standard deviation Burner air venturi pressure differential, psid Standard deviation Burner air pressure, psia Standard deviation Reactor inlet air temperature, °F Standard deviation Reactor grid air differential pressure, psid Standard deviation Reactor internal pressure, psia Standard deviation Air heater vent temperature, °F Standard deviation Air heater combustor temperature, °F Standard deviation Air heater inlet pressure, psia Standard deviation Air heater inlet pressure, psia Standard deviation Air heater venturi differential pressure, psid Standard deviation Standard deviation	Air venturi pressure differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, F Standard deviation 2 Fuel air venturi pressure differential, psid Standard deviation 3.11 differential, psid Standard deviation Fuel air line pressure, psia Standard deviation Fuel air inlet temperature, F Standard deviation Burner air venturi pressure differential, psid Standard deviation Burner air venturi pressure differential, psid Standard deviation Burner air pressure, psia Standard deviation Burner air pressure, psid Standard deviation Reactor inlet air temperature, F Standard deviation Reactor grid air differential pressure, psid Standard deviation Air heater vent temperature, F Standard deviation Air heater combustor temperature, F Standard deviation Air heater combustor temperature, F Standard deviation Air heater vent temperature, F Standard deviation Air heater vent pressure, psia Standard deviation Air heater venturi differential pressure, psid	Air venturi pressure differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, F Standard deviation Air inlet temperature, F Standard deviation Fuel air venturi pressure differential, psid Standard deviation Psia Standard deviation Pressure differential, psid Standard deviation Pressure, Psia Standard deviation Pressure, Psid Standard deviation Pressure, psid Standard deviation Pressure, psid Standard deviation Pressure, psia Standard deviation Air heater vent temperature, F Standard deviation Air heater combustor temperature, F Standard deviation Pressure, psia P	Air venturi pressure differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, F Standard deviation Air inlet temperature, F Standard deviation Fuel air venturi pressure differential, psid Standard deviation Fuel air line pressure, differential, psid Standard deviation Fuel air line pressure, psia Standard deviation Fuel air inlet remperature, F Standard deviation Fuel air nilet remperature, F Standard deviation Burner air venturi pressure differential, psid Standard deviation Burner air pressure, psia Standard deviation Burner air pressure, psia Standard deviation Burner air pressure, psid Standard deviation Reactor inlet air temperature, F Standard deviation Reactor grid air pressure, psia Standard deviation Reactor internal pressure, psia Standard deviation Air heater vent temperature, F Standard deviation Air heater combustor temperature, F Standard deviation Air heater inlet pressure, psia Standard deviation Air heater venturi differential pressure, psid Standard deviation Air heater inlet pressure, psia Standard deviation Air heater venturi differential pressure, psid Standard deviation Air heater	Air venturi pressure differential, psid Standard deviation Air nine pressure, offerential, psid Standard deviation Air nine temperature, F Standard deviation Pressure differential, psid Standard deviation Fuel air nemperature, F Standard deviation Pressure differential, psid Standard deviation Pressure,	TBIA TBIB TBIC TBID TDIE Air venturi pressure differential, psid Standard deviation	TBIA TBIB TBIC TBID TDIE TBIF Air venturi pressure differential, psid Standard deviation Ari neater venturi pressure, psid Standard deviation Passure, psid Standard deviation Ari neater venturi pressure, psid Standard deviation Passure, psid Standard deviation Pa	Air venturi pressure differential, psid Standard deviation Air inlet temperature, F Standard deviation Pues are demonstrated eviation Pues are persure at pressure differential, psid Standard deviation Fuel air inlet temperature, F Standard deviation Pues are in pressure, psid Standard deviation Pues are in pressure, psid Standard deviation Pues are in pressure deviation Pues are in pressure, psid Standard deviation Pues are in pressure, psid Standard deviation Pues are in pressure deviation Pues are in pressure, psid Standard deviation Pues are in pressure differential, psid Pues are in pressure, psid Standard deviation Pues are in pressure, psid Pues are in

131	Air heater combustor temperature, °F	79	181	210	221	275	230	267	238
131	Standard deviation	3	58	21	72	16	85	9	64
148	Air heater inlet pressure, psia							132.2	
148	Standard deviation	2.4	4.3	2.1	1.8	3.0	2.5	2.1	2.7
149	Air heater venturi dif- ferential pressure, psid	(b)	0.45	0.53	1.19	1.80	2.70	1.58	2.12
149	Standard deviation	(b)	0.13	0.22	0.70	0.35	0.47	0.20	6.55
CO4A	Combustor airflow rate, lb/hr	(b)							
CO4A	Standard deviation	(b)							
CO4B	Burner airflow rate, lb/hr	(b)							
CO4B	Standard deviation	(b)							
CO4C	Fuel airflow rate, lb/hr	(b)							
CO4C	Standard deviation	(b)							
C04	Total airflow rate, lb/hr	571	584	572	635	655	643	625	629
C04	Standard deviation	8	12	9	31	11	14	9	116
C09	Reactor coal-air ratio	0.063	0.065	0.063	0.067	0.067	0.064	0.065	0.106
C09	Standard deviation	0.012	0.015	0.018	0.009	0.013	0.013	0.010	0.299
C16	Reactor grid flow coefficient	0.257	0.330	0.474	0.607	0.633	0.508	0.928	0.545
C16	Standard deviation	0.023	0.053	0.094	0.086	0.084	0.069	0.169	0.099

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

FOLDOUT FRAME

TABLE 4. - Continued.

Data chan-	Parameter				Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
800	Air venturi pressure differential, psid	5.26	5.26	5.24	5.38	5.24	5.20	5.19
008 009 009 010 010	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.02 126.0 3.0 82 8 2.35	4.5 79 7	129.8 4.3 79 10	130.1 5.5 74 8	0.03 126.9 2.6 77 5 2.50	131.4 0.9 93 5	0.02 131.4 0.8 86 7 2.63
011 012	Standard deviation Fuel air line pressure, psia	0.17 125.4			0.35 129.0	0.17 126.1		0.11 130.5
012 013	Standard deviation Fuel air inlet temperature, °F	2.9 85	4.5 82	4.3 83	4.8 77	2.6 79	0.9 96	0.8 87
013 015	Standard deviation Burner air venturi pressure differential, psid	8 0.14	7 0.16	10 0.14	8 0.32	5 0.13	4 0.14	
015 016	Standard deviation Burner air pressure, psia	0.02 126.1		0.01 129.7	0.55 129.8	0.01 127.1		
016 050	Standard deviation Reactor inlet air temperature, °F	3.0 80	4.5 76	4.4 78	4.7 72	2.6 77	0.9 84	0.8 89
050 054	Standard deviation Reactor grid air differential pressure, psid	7 1.50	4 1.63	7 1.67	5 3.33	4 1.86	4 2.38	8 4.10
054 055	Standard deviation Reactor internal pressure, psia	0.22 84.1	0.07 84.0	0.10 83.9		0.04 83.6	0.12 83.9	0.27 83.5
055 099	Standard deviation Air heater vent temperature, °F	0.1 475	0.2 475	0.1 473	1.8 478	0.1 472	0.2 444	0.3 479
099 131	Standard deviation Air heater combustor temperature, °F	5 294	6 274	6 288	13 266	11 270	39 240	14 267
131 148	Standard deviation Air heater inlet pressure, psia	3 126.1	129.1	130.0	14 131.5	8 126.3	32 131.6	19 131.7
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	3.2 3.17	4.5 1.47	4.7 1.74	7.7 1.59	2.5 1.40	0.7 0.77	0.6 1.19
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.46 (b)	0.11 (b)	0.29 (b)	0.71 (b)	0.11 (b)	0.34 (b)	0.14 (b)
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)

- parear a	temperature, °F	anganing pagaman na manganan na manan br>Na mananan na mananan na manan na mana	s s. s	and to be the second of the second of the second	A CONTRACTOR OF THE REAL PROPERTY.	ACT THE OWNER WHE	AND STREET, SOUTH	A PARTY OF THE PAR
099	Standard deviation	5	6	6	13		39	14
131	Air heater combustor	294	274	288	266	270	240	267
	temperature, F		_	_		_		
131	Standard deviation	3	5		14			
148	Air heater inlet	126.1	129.1	130.0	131.5	126.3	131.6	131./
1.40	pressure, psia		4 5	a =7	~ ~	۰. ۳	o 7	0.6
148	Standard deviation	3.2		4.7				
149	Air heater venturi dif- ferential pressure, psid	3.17	1.47	1.74	1.59	1.40	0.77	1.19
149	Standard deviation	0.46	0.11	0.29	0.71	0.11	0.34	0.14
CO4A	Combustor airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04A	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	575	592	590	610	575	599	591
C04	Standard deviation	17	14	11	69	7	11	2
C09	Reactor coal-air ratio			0.048				
C09	Standard deviation			0.010				
C16	Reactor grid flow coefficient	0.752	0.753	0.810	0.457	0.607	0.466	0.360
C16	Standard deviation	0.098	0.058	0.027	0.025	0.083	0.028	0.047

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

FOLDOUT FRAME 2.

TABLE 4. - Continued.

Data	Parameter				1	Test			
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
800	Air venturi pressure	6.12	18.52	2.76	4.74	4.90	3.26	5.46	6.43
008 009 009 010 010	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	2.78 131.3 1.7 135 5	0.06 129.9 1.1 117 4 5.74	1.2 127 7	0.08 130.1 1.1 135 9 6.69	0.05 129.9 3.3 128 7 6.67	0.02 125.7 2.4 120 10 5.22	0.03 124.5 2.6 238 6 5.22	0.06 132.5 3.6 133 7 6.06
011 012	differential, psid Standard deviation Fuel air line pressure, psia	0.16 131.5	0.10 130.2	0.10 132.1			0.25 126.0		0.32 132.9
012 013	Standard deviation Fuel air inlet temperature, °F	1.7 52	1.1 52	1.2 50	1.0 42	3.4 44	2.4 41	2.4 34	3.6 33
013 015	Standard deviation Burner air venturi pressure differential, psid	7 (b)	2 (b)	2 (b)	3 (b)	8 (b)	3 (b)	1 (b)	4 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 131.5	(b) 130.3						(b) 132.9
016 050	Standard deviation Reactor inlet air temperature, °F	1.7 111	1.1 110	1.2 111	1.0 110	3.3 111	2.4 110	2.4 208	3.5 110
050 054	Standard deviation Reactor grid air differential pressure, psid	0 2.68	0 10.20	2.20	0 6.73	0 5.00	0 2.06	6 3.94	0 1.67
054 055	Standard deviation Reactor internal	1.21 80.0	0.23 80.2	0.39 80 <i>:</i> 3		0.09 59.8		0.05 80.0	0.06 80.1
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.1 206	0.2 203	0.1 171	4.9 192	0.1 187	0.1 169	0.1 209	0.2 228
099 131	Standard deviation Air heater combustor temperature, °F	6 293	20 336	24 280	11 282	3 278	5 243	10 275	5 290
131 148	Standard deviation Air heater inlet pressure, psia	5 126.3	3 125.2	17 126.8	21 125.3	5 125.2	5 121.5	8 121.2	8 127.6
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1.3 0.91	1.0 1.47		0.9 0.96	2.9 1.01	1.9 1.01	2.1 5.22	2.7 1.20
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.26 482	0.05 816	0.06 338	0.14 433	0.11 442	0.06 360	0.06 417	0.08 506
CO4A SO4B	Standard deviation Burner airflow rate, 1b/hr	85 (b)	6 (b)	3 (b)	5 (b)	5 (b)	(b)	4 (b)	10 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

	temperature, °F						THE PROPERTY OF THE PARTY OF TH		EEOS
099	Standard deviation	6			11	3	5	10	5
131	Air heater combustor	293	336	280	282	278	243	275	290
101	temperature, °F	_	_						
131	Standard deviation	5		17	21	5	5	8	8
148	Air heater inlet	126.3	125.2	126.8	125.3	125.2	121.5	121.2	12/.6
148	pressure, psia Standard deviation	1.3	1.0	1.0	0.9	2.0	1 0	2 1	0 7
149	Air heater venturi dif-	0.91	1.47		0.96	2.9 1.01	1.9 1.01		2.7 1.20
	ferential pressure,	0.91	1.47	0.55	0.30	1.01	1.01	3.22	1.20
149	Standard deviation	0.26	0.05	0.06	0.14	0.11	0.06	0.06	0.08
CO4A	Combustor airflow rate, lb/hr	482	816	338	433	442	360	417	506
CO4A	Standard deviation	85	6	3	5	5	3	4	10
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	542	8 75	399	498	507	416	474	569
C04	Standard deviation	85	6	4	5	7	4	5	12
C09	Reactor coal-air ratio	0.100	0.069	0.107	0.098	0.091	0.079	0.092	0.084
C09	Standard deviation							0.009	
C16	Reactor grid flow coefficient	0.494	0.414	0.381	0.375	0.374	0.415	0.374	0.647
C16	Standard deviation	0.006	0.005	0.041	0.003	0.004	0.024	0.002	0.011

 $^{\rm b}{\rm Data}$ or results were not obtained.

TABLE 4. - Continued.

	(b) concinaca:	001111	Ju 3 601	mpuc	u 11 5	y 3 CCIII(2000	
Data chan-	Parameter				Test			
nel		E19	E13A	E13B	E14	E11	E12	E15
800	Air venturi pressure differential, psid	5.94	9.73	10.21	4.55	5.95	2.85	5.25
008 009 009 010 010	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.05 133.9 1.0 145 6	132.1 0.9 152 2	0.7 144 3	133.4 0.9 148 7		1.3 147 12	1.9 140 4
011 012	differential, psid Standard deviation Fuel air line pressure, psia	0.07 134.3	0.07 132.4	0.06 131.5			0.24 133.8	
012 013	Standard deviation Fuel air inlet temperature, °F	1.0 47	0.9 54		0.9 46	0.8 36	1.3 39	1.9 46
013 015	Standard deviation Burner air venturi pressure differential, psid	7 (b)	(b)	(b)	1 (b)	(b)	(p)	(b)
015 016	Standard deviation Burner air pressure, psia	(b) 134.2	(b) 132.4	(b) 131.5	(b) 133.6	(b) 132.4	(b) 133.7	(b) 129.5
016 050	Standard deviation Reactor inlet air temperature, °F	1.0 124			0.9 119	0.8 120	1.3 118	1.9 120
050 054	Standard deviation Reactor grid air differential pressure, psid	2 2.45				0 2.55	0 1.43	2 2.62
054 055	Standard deviation Reactor internal	0.07 80.1	0.12 80.2					0.65 63.3
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.2 227	0.1 212	0.1 221	0.1 206	4.2 199	4.4 184	8.1 191
099 131	Standard deviation Air heater combustor temperature, °F	24 323			3 300	4 294	9 262	4 277
131 148	Standard deviation Air heater inlet pressure, psia	37 132.3	6 132.3	3 131.7	6 133.2	6 132.3	12 133.2	6 129.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	2.0 1.65				0.6 1.98	1.3 1.63	2.0 1.88
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.79 486	0.07 603	0.04 618	0.12 425	0.08 486	0.15 339	0.15 447
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	4 (b)				3 (b)	4 (b)	48 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
<u> </u>	Standard deviation	(b)	(<u>b</u>)	1 v- ca (ab.)	(b)	(b)	(b)	(b)

1 2 4 1 1	temperature, °F		College State Co	And the second second	Control of	A STATE OF THE STA	r de la companya de l	AND THE PERSONS IN THE PERSONS IN
099	Standard deviation	24	3	2	3	4	9	4
131	Air heater combustor	323	312	323	300	294	262	277
	temperature, °F							
131	Standard deviation	37			6			
148	Air heater inlet	132.3	132.3	131.7	133.2	132.3	133.2	129.4
140	pressure, psia	0 0	0.0	۰. ۳	0.0	0.6	1 0	0 0
148	Standard deviation	2.0					1.3	
149	Air heater venturi dif- ferential pressure, psid	1.65	2.11	2.06	1.56	1.98	1.63	1.88
149	Standard deviation	0.79	0.07	0.04	0.12	0.08	0.15	0.15
CO4A	Combustor airflow rate, lb/hr	486	603	618	425	486	339	447
CO4A	Standard deviation	4	8	2	2	3	4	48
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4	Total airflow rate,	548	665	679	488	550	405	511
	lb/hr							0
C04	Standard deviation	4	8	2	3	4	4	49
CO9	Reactor coal-air ratio					0.065		
C09	Standard deviation					0.021		
C16	Reactor grid flow coefficient	0.518	0.525	0.526	0.502	0.520	0.507	0.524
C16	Standard deviation	0.005	0.005	0.004	0.008	0.004	0.012	0.012

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter				-	ſest				
nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
800	Air venturi pressure differential, psid	5.95	14.53	2.32	9.82	8.08	4.57	4.24	4.16	3.98
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.03 130.8 2.2 98 4 6.22	1.0 98 0	0.15 132.1 2.0 102 3 5.34	1.1 96 2	0.04 129.0 2.2 99 2 5.61	0.20 130.9 1.7 97 3 6.01	0.01 132.8 1.6 57 3 6.12	0.03 127.4 1.0 94 2 6.68	0.02 128.7 3.5 102 2 6.78
011 012	Standard deviation Fuel air line pressure, psia	0.19 130.9		0.33 132.1	0.13 130.4		0.23 131.1	0.12 132.7	0.05 128.1	0.18 128.8
012 013	Standard deviation Fuel air inlet temperature, °F	2.2 52	1.0 73	2.0 61	1.2 57	2.2 51	1.7 53	1.6 52	1.0 45	3.5 38
013 015	Standard deviation Burner air venturi pressure differential, psid	7 (b)	(b)	4 (b)	(b)	(b)	1 (b)	4 (b)	3 (b)	(b)
015 016	Standard deviation Burner air pressure, psia	(b) 130.9	(b) 128.4	(b) 132.2	(b) 130.5	(b) 129.6	(b) 131.0	(b) 132.8	(b) 128.1	(b) 128.8
016 050	Standard deviation Reactor inlet air temperature, °F	2.2 99	1.0 100	2.0 101	1.1 101	2.2 101	1.7 98	1.6 60	1.0 98	3.5 103
050 054	Standard deviation Reactor grid air differential pressure, psid	0 2.04	0 7.68	0 0.67	0 4.51	0 3.76	0 2.16	3 1.86	0 1.97	0 2.38
054 055	Standard deviation Reactor internal pressure, psia	0.09 73.2	0.21 79.9	0.05 72.8	0.16 81.0	0.19 80.7	0.06 76.6	0.10 80.1	0.03 60.4	0.04 40.7
055 099	Standard deviation Air heater vent temperature, F	0.8 302	0.1 518	6.0 251	0.6 422	0.2 508	2.1 273	0.2 435	0.1 437	0.0 266
099 131	Standard deviation Air heater combustor temperature, °F	63 416	12 527	10 363	100 496	17 525	32 403	2 266	8 441	1 410
131 148	Standard deviation Air heater inlet pressure, psia	11 126.2	13 124.2	8 127.3	40 125.9	8 125.1	7 126.3	2 127.9	5 124.0	1 124.6
148 149	Standard déviation Air heater venturi dif- ferential pressure, psid	1.9 0.39		1.7 0.20	0.9 1.43	1.9 2.31	1.4 0.31	1.4 1.70	0.9 3.19	2.9 0.37
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.03 500	0.69 743	0.01 317	0.90 631	0.66 572	0.02 441	0.02 445	0.04 417	0.01 407
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	4 (b)	4 (b)	11 (b)	3 (b)	6 (b)	8 (b)	4 (b)	2 (b)	5 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C CO4	Standard deviation Total airflow rate,	(b) 562	(b) 801	(b) 380	(b) 690	(b) 631	(b) 502	(b) 507	(b) 481	(b) 473

	temperature, °F	, 302	TOTO	TO ST.	THE C	- 300	WAREN ELS	The state of	THE BUTTON	Complete Com
099	Standard deviation	63	12	10	100	17	32	2	8	1
131	Air heater combustor temperature, °F	416	527	363	496	525				410
131	Standard deviation	11	13	8	40	8	7	2	5	1
148	Air heater inlet pressure, psia	126.2	124.2	127.3	125.9	125.1	126.3	127.9	124.0	124.6
148	Standard deviation	1.9	0.8	1.7	0.9	1.9	1.4	1.4	0.9	2.9
149	Air heater venturi dif- ferential pressure, psid	0.39	1.95	0.20	1.43	2.31	0.31	1.70	3.19	0.37
149	Standard deviation	0.03	0.69	0.01	0.90	0.66	0.02	0.02	0.04	0.01
CO4A	Combustor airflow rate, lb/hr	500	743	317	631	572	441	445	417	407
CO4A	Standard deviation	4	4	11	3	6	8	4	2	5
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	562	801	380	690	631	502	507	481	473
C04	Standard deviation	6	5	11	4	8	7	5	3	6
C09	Reactor coal-air ratio	0.090	0.066	0.103	0.074	0.076	0.083	0.073	0.092	0.077
C09	Standard deviation	0.015	0.006	0.017	0.016	0.025	0.005	0.003	0.025	0.006
C16	Reactor grid flow coefficient	0.599	0.434	0.671	0.481	0.479	0.500	0.514	0.558	0.604
C16	Standard deviation	0.010	0.007	0.032	0.008	0.011	0.004	0.015	0.003	0.002

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

Data	Parameter			•	٦	Γest			
chan- nel		F19	F16	F27	G2	G3	G6	G1	G5
800	Air venturi pressure	9.84	9.62	7.83	6.06	13.82	7.52	2.92	16.16
008 009 009 010 010	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.05 131.4 1.2 106 5 6.06	0.04 129.6 2.2 104 3 5.87	0.04 132.9 0.6 106 1 7.03	0.04 128.8 2.5 67 4 5.79	0.09 130.4 2.0 99 2 5.68	0.06 129.3 1.3 111 4 5.58	0.05 134.9 1.7 119 3 6.13	0.10 131.5 1.2 96 2 5.99
011 012	differential, psid Standard deviation Fuel air line pressure, psia	0.10 131.8	0.22 130.1	0.05 133.3	0.35 128.8	0.20 130.4	0.11 129.4	0.15 135.0	0.14 131.6
012 013	Standard deviation Fuel air inlet temperature, °F	1.2 39	2.2 37	0.7 37	2.4 63	1.9 56	1.3 51	1.7 48	1.1 64
013 015	Standard deviation Burner air venturi pressure differential, psid	1 (b)	1 (b)	2 (b)	5 (b)	4 (b)	1 (b)	1 (b)	8 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 131.8	(b) 130.0	(b) 133.3	(b) 128.9	(b) 130.5	(b) 129.4	(b) 134.9	(b) 131.6
016 050	Standard deviation Reactor inlet air temperature, °F	1.2 104	2.2 103	0.6 104	2.4 68	1.9 104	1.3 103	1.7 103	1.2 102
050 054	Standard deviation Reactor grid air differential pressure, psid	0 3.81	0 3.88	0 4.12	1.09	0 3.34	2.11	0 0.93	0 2.95
054 055	Standard deviation Reactor internal pressure, psia	0.13 80.7		0.06 60.6	0.16 75.7	0.05 79.9	0.04 79.6	0.23 79.9	0.04 80.6
055 099	Standard deviation Air heater vent temperature, F	0.1 489	0.1 524	0.2 533	11.9 106	0.2 264	0.3 241	0.2 191	0.3 279
099 131	Standard deviation Air heater combustor temperature, °F	69 527	5 545	12 555	8 98	2 389	2 359	2 267	4 415
131 148	Standard deviation Air heater inlet pressure, psia	21 127.2	12 125.7	128.6	5 124.7	126.1	3 125.1	4 129.9	8 127.0
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1.0 1.80		0.5 1.64	1.9 (b)	1.7 0.72	1.1 0.64	1.5 0.54	0.9 0.54
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.49 629	0.13 619	0.03 570	(b) 515	0.05 734	0.02 549	0.02 354	0.12 791
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	5 (b)	6 (b)	(b)	6 (b)	7 (b)	3 (b)	5 (b)	4 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C CO4	Standard deviation Total airflow rate,	(b) 692	(b) 680	(b) 637	(b) 574	(b) 793	(b) 607	(b) 417	(b) 851

	temperature, °F	489	524	533	106	264	241	. 191	279
099	Standard deviation	69	5	12	8	3 2) 6	2 0	
131	Air heater combustor temperature, °F	527	_						
131	Standard deviation	21	12	4	5) 1		_
148	Air heater inlet pressure, psia			128.6		126.1	2 3 125 . 1	129.9	8 127.0
148	Standard deviation	1.0	2.0	0.5	1.9	1.7	1 1	1 -	0.0
149	Air heater venturi dif- ferential pressure, psid	1.80			(b)				
149	Standard deviation	0.49	0.13	0.03	(b)	0.05	0 00	0 00	0.10
CO4A	Combustor airflow rate, lb/hr	629	619	570	515			0.02 354	0.12 791
CO4A	Standard deviation	5	6	2	6	7	2	-	
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	6 (b)	7 (b)	3 (b)	5 (b)	4 (b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	/ b\	/ ៤ \	/ 1 \	41.3
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	/ 6)	/ L \	763	(;)
C04	Total airflow rate, lb/hr	692	680	637	574	(b) 793	(b) 607	(b) 417	(b) 851
C04	Standard deviation	6	8	2	7	0			_
C09	Reactor coal-air ratio	0.077	0.072	0 074	7	8	0 020	6	4
C09	Standard deviation	0.014	0.003	0.010	0.049	0.033	0.039	0.056	0.053
C16	Reactor grid flow coefficient	0.525	0.511	0.526	0.817	0.658	0.620	0.029 0.614	0.008 0.750
C16	Standard deviation	0.007	0.006	0.005	0.036	0.003	0.005	0.066	0.004

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
800	Air venturi pressure differential, psid	16.13	5.84	8.19	6.08	6.76	6.58	2.88	16.31	2.91
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.08 130.8 1.3 99 1 5.82	0.02 132.2 1.3 101 2 6.12	0.03 129.0 3.0 100 2 5.87	0.01 128.1 1.5 103 2 5.67	0.03 133.5 2.3 107 4 6.08	0.02 130.6 1.0 108 5 5.85	0.01 133.3 0.8 117 4 5.98	0.13 130.7 3.5 96 3 5.79	0.02 133.3 2.9 110 2 6.13
011 012	differential, psid Standard deviation Fuel air line pressure, psia	0.15 130.8	0.10 132.2	0.27 129.1	0.15 128.2	0.22 133.5	0.14 130.5	0.07 133.3	0.31 130.7	0.26 133.2
012 013	Standard deviation Fuel air inlet temperature, °F	1.4 79	1.3 68	3.0 62	1.5 59	2.3 60	1.0 63	0.8 50	3.5 52	2.9 68
013 015	Standard deviation Burner air venturi pressure differential, psid	(b)	5 (b)	2 (b)	2 (b)	4 (b)	6 (b)	(p)	3 (b)	3 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 131.0	(b) 132.3	(b) 129.2	(b) 128.3	(b) 133.5	(b) 130.6	(b) 133.3	(b) 130.8	(b) 133.2
016 050	Standard deviation Reactor inlet air temperature, °F	1.3 102	1.3 103	3.0 102	1.5 103	2.2 102	1.0 103	0.8 103	3.5 102	2.9 103
050 054	Standard deviation Reactor grid air differential pressure, psid	0 2.82	0 1.39	0 1.72	0 1.38	2.00	0 2.18	1.10	0 4.29	0 1.13
054 055	Standard deviation Reactor internal pressure, psia	0.02 80.5	0.02 80.6	0.03 80.6	0.04 80.4	0.05 80.6	0.05 80.1	0.03 80.0	0.12 80.1	0.03 80.1
055 099	Standard deviation Air heater vent temperature, F	0.3 257	0.2 231	0.3 238	0.2 228	0.3 223	0.2 211	0.1 168	0.2 256	0.1 174
099 131	Standard deviation Air heater combustor temperature, °F	5 377	4 323	4 341	1 327	11 321	4 304	1 238	4 387	9 241
131 148	Standard deviation Air heater inlet pressure, psia	7 126.7	127.7	3 124.9	1 124.2	22 128.7	4 126.3	1 128.7	6 126.5	11 128.5
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	0.8 0.36	1.1 0.39	2.6 0.51	1.3 0.56	2.0 0.66	0.8 0.67	0.7 0.77	3.1 0.99	2.5 0.50
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.05 786	0.04 497	0.05 575	0.03 497	0.09 533	0.08 519	0.01 350	0.06 791	0.07 353
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	5 (b)	2 (b)	8 (b)	4 (b)	4 (b)	4 (b)	2 (b)	13 (b)	4 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) 851	(b)

	temperature, °F		(Shuadhailte) an Aut	THE REAL PROPERTY.	And After Selen	exaministic to the chi	confidence and once seems	TO THE PARTY OF TH	A STATE OF THE PARTY OF THE PAR	
099	Standard deviation	5		4	1	11	4		4	9
131	Air heater combustor temperature, °F	377	323	341	327	321	304	238	387	241
131	Standard deviation	7	4	3	1	22	4	1	6	11
148	Air heater inlet pressure, psia	126.7	127.7	124.9	124.2			128.7	126.5	128.5
148	Standard deviation	0.8	1.1	2.6	1.3	2.0	0.8	0.7	3.1	2.5
149	Air heater venturi dif- ferential pressure, psid	0.36		0.51	0.56		0.67	0.77	0.99	0.50
149	Standard deviation	0.05	0.04	0.05	0.03	0.09	0.08	0.01	0.06	0.07
CO4A	Combustor airflow rate, lb/hr	786	497	575	497	533	519	350	791	353
CO4A	Standard deviation	5	2	8	4	4	4	2	13	4
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	845	558	635	556	594	<u>5</u> 79	411	851	415
CO4	Standard deviation	6	3	9	5	5	4	2	15	6
C09	Reactor coal-air ratio	0.043	0.054	0.041	0.048		0.029	0.037	0.039	0.031
C09	Standard deviation	0.009	0.022	0.004	0.003	0.006	0.017	0.008	0.004	0.012
C16	Reactor grid flow coefficient	0.762	0.690	0.716	0.693	0.615	0.576	0.547	0.623	0.545
C16	Standard deviation	0.005	0.004	0.007	0.008	0.008	0.006	0.010	0.005	0.009

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

(b) Continued. - Combustor input air system data

	(2) 33		•		•				
Data	Parameter				T	est			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
800	Air venturi pressure	7.57	7.63	3.25	6.74	14.04	7.05	14.34	14.41
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.31 135.3 2.3 101 2 6.25	0.03 134.2 2.4 104 5 6.12	2.0 103 2	0.13 130.2 0.9 103 1 5.75	0.15 129.8 1.3 98 1 5.81	0.04 130.4 1.5 108 3 5.77	129.7 2.7 268 1	0.04 127.3 1.2 305 2 5.56
011	differential, psid Standard deviation	0.24	0.25	0.22	0.06			0.26	
012	Fuel air line pressure, psia					129.7		131.4 2.7	129.9
012 013	Standard deviation Fuel air inlet temperature, °F	2.3 63	2.4 55	2.0 70	0.9 78	1.3 65	1.5 56	63	84
013 015	Standard deviation Burner air venturi pressure differential, psid	5 (b)	2 (b)	(b)	1 (b)	(b)	(b)	8 (b)	4 (b)
015 016	Standard deviation Burner air pressure,	(b) 135.2	(b) 134.2	(b) 132.2	(b) 130.1	(b) 129.8	(b) 130.5	(b) 131.5	(b) 130.0
016 050	psia Standard deviation Reactor inlet air	2.3 103	2.4 103	2.0 104	0.9 104	1.3 104	1.5 104		1.2 273
050 054	temperature, °F Standard deviation Reactor grid air differential pressure,	0 2.32					0 2.01		3 3.21
054 055	psid Standard deviation Reactor internal	0.11 80.3			0.05 80.0				0.03 80.9
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.3 234		0.3 199		0.5 252	0.4 217	0.2 270	0.2 280
099 131	Standard deviation Air heater combustor	3 333							
131 148	temperature, F Standard deviation Air heater inlet	4 130.2	3 129.4	5 127.6	3 126.0	5 125.7	5 126.2	5 128.1	3 127.2
148 149	pressure, psia Standard deviation Air heater venturi dif- ferential pressure,	2.0 0.55							0.9 13.69
149 CO4A	psid Standard deviation Combustor airflow rate,	0.06 568							
CO4A CO4B	lb/hr Standard deviation Burner airflow rate,	12 (b)							
C04B C04C	lb/hr Standard deviation Fuel airflow rate,	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
	1b/hr	omersensensenskakel	minimi/h)		ion and (sh)	h			(b)

~;	099	Air heater vent temperature, °F	234	235	199	224	252	217	270	280
	099	Standard deviation	3	2	3	1	2	4	9	7
	131	Air heater combustor temperature, °F	333	341	274	310	358	302		
	131	Standard deviation	4	3	5	3	5	5	5	3
	148	Air heater inlet pressure, psia	130.2	129.4		126.0	125.7	126.2	128.1	127.2
	148	Standard deviation	2.0	2.0	1.7	0.8	1.2	1.3	2.6	0.9
	149	Air heater venturi dif- ferential pressure, psid	0.55	0.66	0.37	0.41	0.70	0.74		13.69
	149	Standard deviation	0.06	0.06	0.01	0.01	0.08	0.06	0.31	0.17
	CO4A	Combustor airflow rate, 1b/hr	568	567	374	526	737	536	650	628
	CO4A	Standard deviation	12	7	3	6	7	4	7	3
	CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C04	Total airflow rate, lb/hr	631	629	435	585	797	5 96	71Ó	685 685
	C04	Standard deviation	13	9	5	6	8	5	9	4
	CO9	Reactor coal-air ratio				0.038				
	C09	Standard deviation	0.011	0.005	0.015	0.005	0.006	0.017	0.030	0.007
	C16	Reactor grid flow coefficient				0.630				
	C16	Standard deviation	0.007	0.009	0.007	0.005	0.007	0.008	0.004	0.002

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		Н1	Н2	НЗ	Н4	н5А	Н5В	Н6	н7	Н8
800	Air venturi pressure	3.23	7.39	7.84	5.33	10.52	25.89	20.30	21.30	11.13
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.06 128.1 2.4 101 1 5.56	0.19 134.2 3.1 98 1 6.04	0.37 132.9 5.0 98 1 6.65	0.07 135.7 1.6 99 1 6.85	0.32 130.5 3.3 99 1 6.17	0.64 116.7 0.5 97 1 5.39	2.25 131.7 1.7 95 1 6.66	0.72 131.9 2.8 95 1 6.14	0.44 125.9 3.9 99 1 5.40
011 012	differential, psid Standard deviation Fuel air line pressure, psia	0.19 128.1	0.25 134.1	0.26 132.9	0.07 135.8	0.21 130.7	0.14 118.2	0.08 131.9	0.20 132.2	0.27 126.1
012 013	Standard deviation Fuel air inlet temperature, °F	2.4 92	3.1 72	5.0 70	1.6 69	3.3 95	0.5 89	1.8 71	2.7 76	3.9 91
013 015	Standard deviation Burner air venturi pressure differential, psid	3 (b)	1 (b)	0 (b)	(b)	2 (b)	4 (b)	0 (b)	5 (b)	3 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 130.2	(b) 136.3	(b) 135.1	(b) 137.9	(b) 132.7	(b) 120.1	(b) 134.1	(b) 134.3	(b) 128.2
016 050	Standard deviation Reactor inlet air temperature, °F	2.4 101	3.1 100	5.0 99	1.6 99	3.3 99	0.5 98	1.8 99	2.8 100	3.9 101
050 054	Standard deviation Reactor grid air differential pressure, psid	0 2.67	0 6.76	0 12.45	0 8.72	0 15.34	1 7.82	0 5.14	0 4.22	0 2.65
054 055	Standard deviation Reactor internal pressure, psia	0.04 80.1	0.08 80.2	0.46 49.2	0.50 49.2	0.34 50.1	0.29 62.2	0.35 60.5	0.03 79.0	0.05 79.2
055 099	Standard deviation Air heater vent temperature, F	0.1 213	0.1 225	0.1 237	0.2 223	0.9 207	0.1 498	2.2 445	0.1 481	0.2 419
099 131	Standard deviation Air heater combustor temperature, F	11 295	2 336	2 348	4 327	15 274	44 391	77 476	15 470	12 408
131 148	Standard deviation Air heater inlet pressure, psia	16 124.9		129.1	9 131.5	35 127.1	147 116.3	23 128.4	11 128.5	17 123.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	2.1 0.04	2.5 0.27	4.3 0.30	1.3 0.25	2.8 0.02	0.5 7.03	1.5 0.88	2.4 1.00	3.4 1.01
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.02 368		0.01 574	0.02 483	0.02 650	0.46 883	0.31 868	0.01 888	0.02 654
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	1 (b)	2 (b)	(b)	1 (b)	1 (b)	9 (b)	39 (b)	1 (b)	1 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)
C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 ·U23	temperature, °F	Z13	*** CC O	£3/*	CZ3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	******	er Lemma	William of College	THE PROPERTY OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUMN TO THE PE
099 .	Standard deviation	11	2	2	4	15	44	77	15	12
131	Air heater combustor temperature, °F	295	336	348	327	274		476	470	408
131	Standard deviation	16	2	4	9	35	147	23	11	17
148	Air heater inlet								128.5	
	pressure, psia									
148	Standard deviation	2.1	2.5	4.3	1.3	2.8	0.5	1.5	2.4	3.4
149	Air heater venturi dif- ferential pressure, psid	0.04	0.27	0.30	0.25	0.02	7.03	0.88	1.00	1.01
149	Standard deviation	0.02	0.01	0.01	0.02	0.02	0.46	0.31	0.01	0.02
CO4A	Combustor airflow rate, lb/hr	368	561	574	483	650	883	868	888	654
CO4A	Standard deviation	1	2	1	1	1	9	39	1	1
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, 1b/hr	424	622	637	548	709	937	932	949	709
C04	Standard deviation	2	2	2	1	2	10	39	3	2
CO9	Reactor coal-air ratio								0.066	
C09	Standard deviation								0.008	
C16	Reactor grid flow coefficient	0.367	0.349	0.326	0.333	0.327	0.576	0.713	0.708	0.660
C16	Standard deviation	0.003	0.001	0.006	0.009	0.002	0.010	0.005	0.001	0.007

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter					Test				
nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
800	Air venturi pressure differential, psid	10.78	17.70	10.10	2.89	11.33	8.51	5.83	9.98	7.46
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.88 126.3 8.9 95 1 5.59	0.35 132.2 1.9 94 1 6.17		2.4 98 2	0.55 123.4 4.9 95 1 5.40	0.25 130.9 2.3 95 3 5.52	0.16 129.1 3.2 97 1 6.20	0.52 126.0 4.6 97 1 5.97	0.22 131.8 3.7 95 2 6.75
011 012	Standard deviation Fuel air line pressure, psia	0.83 126.5	0.12 132.4		0.21 133.2	0.47 123.7	0.20 130.9	0.13 129.0	0.20 126.0	0.21 131.7
012 013	Standard deviation Fuel air inlet temperature, °F	8.9 66	1.9 62	1.4 59	2.4 58	4.9 67	2.2 56	3.2 82	4.6 81	3.7 58
013 015	Standard deviation Burner air venturi pressure differential, psid	2 (b)	(b)	(b)	(b)	2 (b)	4 (b)	4 (b)	6 (b)	4 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 128.5	(b) 134.6	(b) 136.9	(b) 135.4	(b) 125.7	(b) 133.3	(b) 131.4	(b) 128.4	(b) 134.1
016 050	Standard deviation Reactor inlet air temperature, °F	9.0 101	1.8 100	1.4 99	2.5 98	5.0 99	2.3 98	3.2 99	4.7 99	3.7 98
050 054	Standard deviation Reactor grid air differential pressure, psid	0 2 . 46	0 3.56	0 2.52	1.21	0 2.60	11.22	13.10	0 19.99	18.09
054 055	Standard deviation Reactor internal pressure, psia	0.05 79.1	0.05 79.0	0.05 78.9	0.07 78.8	0.12 78.2	0.30 80.0	0.42 49.5	0.71 49.3	2.60 49.3
055 099	Standard deviation Air heater vent temperature, °F	0.1 413	0.1 487	0.2 422	0.2 333	1.6 456	0.1 426	0.1 352	0.1 427	0.1 428
099 131	Standard deviation Air heater combustor temperature, °F	36 404	15 485	24 425	6 319	15 448	8 440	60 407	21 439	3 433
131 148	Standard deviation Air heater inlet pressure, psia	33 123.6	7 128.8	130.7	4 129.4	5 121.1	10 126.9	15 125.3	8 122.6	2 127.5
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	7.7 0.97	1.5 1.30	1.2 1.37	2.1 1.21	4.3 1.22	1.9 0.74	2.7 0.68	4.0 0.68	3.1 0.67
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.02 646	0.26 826	0.15 651	0.02 356	0.03 654	0.17 593	0.01 492	0.01 624	0.02 560
C04A C04B	Standard deviation Burner airflow rate, lb/hr	5 (b)	2 (b)	1 (b)	1 (b)	2 (b)	7 (b)	1 (b)	8 (b)	2 (b)
C04B C04C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04C C04	Standard deviation Total airflow rate,	(b) 703	(b) 888	(b) 714	(b) 418	(b) 709	(b) 652	(b) 552	(b) 682	(b) 625

	temperature, °F		SECTION PROPERTY.	e e e e e e e e e e e e e e e e e e e			maraprovina and		PER	eres e mange
099	Standard deviation	36	15	24	6	15	8	60	21	3
131	Air heater combustor temperature, °F	404	485	425	319	448	440	407	439	433
131	Standard deviation	33	7	4	4	5	10	15	8	2
148	Air heater inlet pressure, psia	123.6	128.8	130.7	129.4	121.1	126.9	125.3	122.6	127.5
148	Standard deviation	7.7	1.5	1.2	2.1	4.3	1.9	2.7	4.0	3.1
149	Air heater venturi dif- ferential pressure, psid	0.97	1.30		1.21	1.22	0.74	0.68	0.68	0.67
149	Standard deviation	0.02	0.26	0.15	0.02	0.03	0.17	0.01	0.01	0.02
CO4A	Combustor airflow rate, lb/hr	646	826	651	356	654	593	492	624	560
CO4A	Standard deviation	5	2	1	1	2	7	1	8	2
CO4B	Burner airflow rate, lb/hr	(b)	(b)	1 (b)	1 (b)	2 (b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4	Total airflow rate, lb/hr	703	888	714	418	709	652	552	682	625
CO4	Standard deviation	10	2	2	2	4	7	2	8	3
C09	Reactor coal-air ratio	0.077	0.073	0.076	0.116	0.076	0.071	0.082	0.075	0.076
C09	Standard deviation							0.003		
C16	Reactor grid flow coefficient	0.678	0.717	0.674	0.535	0.670	0.284	0.271	0.272	0.261
C16	Standard deviation	0.007	0.005	0.008	0.016	0.010	0.002	0.005	0.003	0.021

TABLE 4. - Continued.

	Data chan-	Parameter			Te	st		
	nel	•	Н19	H20	H23	H24	H25	H26
	800	Air venturi pressure differential, psid	8.95	10.15	10.89	10.92	10.43	10.64
	008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.04 136.5 0.7 93 3 6.01	132.4 5.6 93 2	128.8 1.9 95 1	128.6 4.3 95 1	3.0 99 3	131.1 1.3 96 4
	011	differential, psid				0.29		
	012	Standard deviation Fuel air line pressure, psia		0.44 132.4				
	012 013	Standard deviation Fuel air inlet temperature, °F	0.7 53	5.5 54	1.9 68	4.3 59	3.0 50	1.2 47
	013 015	Standard deviation Burner air venturi pressure differential, psid	1 (b)	3 (b)	1 (b)	6 (b)	1 (b)	1 (b)
	015 016	Standard deviation Burner air pressure,	(b) 138.9	(b) 134.7	(b) 131.1	(b) 130.9	(b) 135.6	(b) 133.4
	016 050	psia Standard deviation Reactor inlet air temperature, °F	0.7 98	5.6 97	1.9 98	4.4 98	3.1 97	
	050 054	Standard deviation Reactor grid air differential pressure, psid	0 11.49	0 12.23	0 11.00			
	054 055	Standard deviation Reactor internal	0.16 79.9		0.19 80.3			
	055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.1 435	0.2 429	0.2 440	0.1 397	0.1 332	0.1 314
	099 131	Standard deviation Air heater combustor	9 441	5 440	7 443	26 405	33 388	33 396
	131 148	temperature, °F Standard deviation Air heater inlet pressure, psia	7 132	3 128	5 125	21 125	2 129	8 127
	148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1 0.634	5 0.638	0.666	4 0.652	3 0.627	1 0.629
	149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.011 622	0.011 647	0.026 658	0.016 658	0.016 655	0.014 657
	CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	(b)	19 (b)	1 (b)	1 (b)	2 (b)	2 (b)
	CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b) (b)	(b)	(b)	(b)
eiste.	GDAC	Ctandandadaviation	(h)	(h)_	(b)	(b)	(b)	(b)

Air heater vent	435	429				
						· ·
	9	5	7	26	33	33
Air heater combustor	441	440	443			
temperature, °F						
	7	3	5	21	2	8
Air heater inlet	132	128				
pressure, psia						
	1	5	2	4	3	1
Air heater venturi dif-	0.634	0.638	0.666	0.652	0.627	0.629
ferential pressure, psid						
Standard deviation	0.011	0.011	0.026	0.016	0.016	0.014
Combustor airflow rate, lb/hr	622	647	658	658	655	657
Standard deviation	2	19	1	1	2	2
Burner airflow rate,						(b)
lb/hr	\'\'	(-)	(~)	(~)	(2)	(5)
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
Fuel airflow rate,						(b)
1b/hr	, ,		(/	(~)	(~)	(5)
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
Total airflow rate,	684	706		Ì15		717
lb/hr						
Standard deviation	2	17	1	3	3	2
Reactor coal—air ratio	0.074	0.076	0.077			
Standard deviation	0.004	0.006	0.003	0.010	0.002	0.005
Reactor grid flow	0.294	0.295	0.317	0.314	0.302	0.299
Standard deviation	0.002	0.006	0.003	0.002	0.004	0.003
	temperature, °F Standard deviation Air heater combustor temperature, °F Standard deviation Air heater inlet pressure, psia Standard deviation Air heater venturi differential pressure, psid Standard deviation Combustor airflow rate, lb/hr Standard deviation Burner airflow rate, lb/hr Standard deviation Fuel airflow rate, lb/hr Standard deviation Total airflow rate, lb/hr Standard deviation Total airflow rate, lb/hr Standard deviation Reactor coal-air ratio Standard deviation	temperature, °F Standard deviation 9 Air heater combustor 441 temperature, °F Standard deviation 7 Air heater inlet 132 pressure, psia Standard deviation 1 Air heater venturi differential pressure, psid Standard deviation 0.011 Combustor airflow rate, 622 lb/hr Standard deviation 2 Burner airflow rate, (b) lb/hr Standard deviation (b) Fuel airflow rate, (b) lb/hr Standard deviation (b) Total airflow rate, (b) lb/hr Standard deviation (b) Total airflow rate, 684 lb/hr Standard deviation 2 Reactor coal-air ratio 0.074 Standard deviation 0.004 Reactor grid flow 0.294 coefficient	temperature, °F Standard deviation 9 5 Air heater combustor 441 440 temperature, °F Standard deviation 7 3 Air heater inlet 132 128 pressure, psia Standard deviation 1 5 Air heater venturi differential pressure, psid Standard deviation 0.011 0.011 Combustor airflow rate, 622 647 lb/hr Standard deviation 2 19 Burner airflow rate, (b) (b) 1b/hr Standard deviation (b) (b) (b) Total airflow rate, (b) (b) 1b/hr Standard deviation (b) (b) (c) Total airflow rate, (b) (c) (c) Total airflow rate, (c) (c) (c) (c) Total airflow rate, (c) (c) (c) (c) Total airflow rate, (c) (c) (c) (c) (c) (c) Total airflow rate, (c) (c) (c) (c) (c) (c) (c) Total airflow rate, (c)	Air heater vent temperature, F Standard deviation 9 5 7 Air heater combustor 441 440 443 temperature, F Standard deviation 7 3 5 Air heater inlet 132 128 125 pressure, psia Standard deviation 1 5 2 Air heater venturi differential pressure, psid Standard deviation 0.011 0.011 0.026 Combustor airflow rate, 1b/hr Standard deviation 2 19 1 Burner airflow rate, 622 647 658 1b/hr Standard deviation 2 19 1 Burner airflow rate, (b) (b) (b) Fuel airflow rate, (b) (b) (b) Total airflow rate, (b) (b) (b) Total airflow rate, (b) (b) (b) Total airflow rate, (b) (c) (c) Total airflow rate, (c) (c) (c) (c) (c) Total airflow rate, (c) (c) (c) (c) (c) Total airflow rate, (c) (c) (c) (c) (c) (c) Total airflow rate, (c)	Air heater vent temperature, °F Standard deviation 9 5 7 26 Air heater combustor temperature, °F Standard deviation 7 3 5 21 Air heater inlet 132 128 125 125 pressure, psia Standard deviation 1 5 2 4 Air heater venturi differential pressure, psid Standard deviation 0.634 0.638 0.666 0.652 Ferential pressure, psid Standard deviation 0.011 0.011 0.026 0.016 Combustor airflow rate, 1b/hr Standard deviation 2 19 1 1 Burner airflow rate, (b)	Air heater vent temperature, °F Standard deviation 9 5 7 26 33 Air heater combustor 441 440 443 405 388 temperature, °F Standard deviation 7 3 5 21 2 Air heater inlet 132 128 125 125 129 pressure, psia Standard deviation 1 5 2 4 3 Air heater venturi differential pressure, psid Standard deviation 0.634 0.638 0.666 0.652 0.627 ferential pressure, psid Standard deviation 0.011 0.011 0.026 0.016 0.016 Combustor airflow rate, 1b/hr Standard deviation 2 19 1 1 2 Burner airflow rate, 1b/hr Standard deviation 2 19 1 1 2 Burner airflow rate, 1b/hr Standard deviation (b) (b) (b) (b) (b) (b) (b) Total airflow rate, 1b/hr Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c

TABLE 4. - Continued..

Data	Parameter					Test				
chan- nel		11	12	13	14	I 5A	I5B	16	17	18
800	Air venturi pressure	14.53	26.59	8.31	4.44	9.30	11.18	14.72	28.05	12.14
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.18 135.4 1.1 94 1 6.19	1.63 130.7 2.6 94 3 5.89	0.08 134.1 1.0 94 4 5.95	0.04 134.2 1.2 99 4 5.95	0.35 134.2 1.0 103 4 5.97	1.0 95 2	0.16 133.3 1.1 94 2 5.79	0.71 129.9 1.5 92 1 5.61	0.16 132.9 1.5 97 1 5.85
011 012	Standard deviation Fuel air line pressure, psia	0.10 135.2	0.30 131.3	0.08 133.9		0.07 134.1	0.09 133.5	0.08 133.1	0.13 130.7	0.12 133.6
012 013	Standard deviation Fuel air inlet temperature, °F	1.1 69	2.4 63	1.0 53	1.2 51	1.0 51	1.0 56	1.1 61	1.4 55	1.5 51
013 015	Standard deviation Burner air venturi pressure differential, psid	(b)	5 (b)	2 (b)	(b)	0 (b)	3 (b)	3 (b)	1 (b)	(p)
015 016	Standard deviation Burner air pressure, psia	(b) 137.4	(b) 133.5	(b) 136.2	(b) 136.2	(b) 136.3	(b) 135.7	(b) 135.3	(b) 132.8	(b) 135.8
016 050	Standard deviation Reactor inlet air temperature, °F	1.1 97	2.5 97	1.0 97	1.2 97	1.0 97	1.0 97	1.1 97	1.5 98	1.5 97
050 054	Standard deviation Reactor grid air differential pressure, psid	0 4.58	0 7.48	0 3.61	0 2.45	0 3.75	0 4.11	1 6.40	1 9.45	0 5.24
054 055	Standard deviation Reactor internal pressure, psia	0.09 79.6	0.30 79.6	0.01 79.5	0.06 79.4	0.13 79.4	0.06 79.3	0.05 80.2	0.39 80.2	0.09 80.2
055 099	Standard deviation Air heater vent temperature, F	0.2 392	0.1 549	0.1 270	0.1 210	0.1 238	0.1 246	0.1 313	0.1 537	0.1 440
099 131	Standard deviation Air heater combustor temperature, °F	115 457	36 534	59 370	3 308	2 360	4 368	81 419	11 522	30 447
131 148	Standard deviation Air heater inlet pressure, psia	32 131.4	19 128.0	9 130.3	3 130.4	5 130.4	5 129.9	27 129.6	7 127.5	13 129.9
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	0.9 0.92		0.9 0.97		0.8 08.0	0.9 0.78	0.9 0.81	1.2 4.90	1.3 4.81
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.42 770	1.63 961	0.78 595	0.04 440	0.02 622	0.06 680	0.32 767	0.19 979	0.02 702
C04A C04B	Standard deviation Burner airflow rate, lb/hr	1 (b)	11 (b)	3 (b)	2 (b)	14 (b)	1 (b)	(b)	5 (b)	0 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	10/111			4. 4						4

,		temperature, °F	397	2 54	9 270	210	238	8 246	31	3 537	440
	099 131	Standard deviation Air heater combustor	115 457					2 4) 368			. 30
	131 148	temperature, °F Standard deviation Air heater inlet	32 131.4	2 19	9 <u>9</u> 0 130.3) a	. E	: -		7 -	13 129.9
	l 48 l 49	pressure, psia Standard deviation Air heater venturi dif- ferential pressure,	0.9 0.92	2.1	. 0.9	1.0	0.8	0.9	0.9	1.2	1.3
	.49 :04A	psid Standard deviation Combustor airflow rate, 1b/hr	0.42 770			0.04 440	0.02 622		0.32 767		0.02
C	04A 04B	Standard deviation Burner airflow rate, lb/hr	1 (b)	11 (b)	3 (b)	2 (b)	14 (b)		2 (b)	2.3	0 (b)
C(04B 04C	Standard deviation Fuel airflow rate, lb/hr	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
CC	04C 04	Standard deviation Total airflow rate, lb/hr	(b) 832	(b) 1021	(b) 656	(b) 502	(b) 684	(b) 741	(b) 827	(b) 1038	(b) 763
00 00 01)9)9	Standard deviation Reactor coal-air ratio Standard deviation Reactor grid flow	1 0.071 0.003 0.585							5 0.067 0.003	1 0.080
C1	.6	coefficient Standard deviation	0.006								

^bData or results were not obtained.

TABLE 4. - Continued.

Data	Parameter	Test						
chan— nel		19	I10A	I10B	I11	I12	113	
800	Air venturi pressure	10.66	6.24	5.77	7.74	14.78	28.31	
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F. Standard deviation Fuel air venturi pressure differential, psid	1.9 96 1	134.7	134.4 1.5 96 1	131.6 2.1 99 5	0.33 132.5 1.1 84 18 5.82	132.2 1.1 92 1	
011 012	Standard deviation Fuel air line pressure, psia	0.12 135.0				0.09 132.5		
012 013	Standard deviation Fuel air inlet temperature, F	1.7 53		1.5 66	2.1 61	1.1 47	1.1 57	
013 015	Standard deviation Burner air venturi pressure differential, psid	3 (b)	4 (b)	1 (b)	9 (b)	(b)	1 (b)	
015 016	Standard deviation Burner air pressure, psia	(b) 137.2	(b) 136.7	(b) 136.4	(b) 133.6	(b) 134.6	(b) 134.5	
016 050	Standard deviation Reactor inlet air temperature, °F	1.7 97		1.5 97	2.1 97	1.1 86	1.1 97	
050 054	Standard deviation Reactor grid air differential pressure, psid	0 4.60		0 2.89	0 3.51	19 8.09	9.14	
054 055	Standard deviation Reactor internal pressure, psia	0.02 80.1	0.64 80.1	0.01 80.2	0.02 80.2	0.15 80.3	1.49 80.1	
055 099	Standard deviation Air heater vent temperature, °F	0.2 376	0.1 223	0.1 216	0.1 229	0.2 230	0.2 247	
099 131	Standard deviation Air heater combustor temperature, °F	71 391	13 328	3 312	7 339	79 348	6 375	
131 148	Standard deviation Air heater inlet pressure, psia	16 131.2	19 130.7	4 130.4	10 128.1	141 128.9	8 128.9	
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1.4 3.44		1.3 0.51	1.8 0.60	0.9 0.74	0.9 1.37	
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	1.94 667	0.07 514	0.02 500	0.13 567	0.37 774	0.11 991	
C04A C04B	Standard deviation Burner airflow rate, lb/hr	1 (b)	65 (b)	(p)	3 (b)	10 (b)	35 (b)	
C04B C04C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	

THE THE SECTION OF TH	temperature, °F		- PERCO	The State of the S	DESCRIPTION OF THE PROPERTY OF	1=1000 (4000)	Z4
099	Standard deviation	71	. 13	3	7	79	é
131	Air heater combustor temperature, °F	391					
131	Standard deviation	16	19	4	10	141	۶
148	Air heater inlet pressure, psia	131.2	130.7		128.1	128.9	128.9
148	Standard déviation	1.4	3.5	1.3	1.8	0.9	0.9
149	Air heater venturi dif- ferential pressure, psid	3.44					
149	Standard deviation	1.94	0.07	0.02	0.13	0.37	0.11
CO4A	Combustor airflow rate, lb/hr	667	514	500	567	774	991
CO4A	Standard deviation	1	65	0	3	10	35
CO4B	Burner airflow rate, lb/hr	(b)		(b)		(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	729	575	561	627	834	1052
C04	Standard deviation	1	65	1	3	10	35
C09	Reactor coal-air ratio	0.068	0.073		0.071	0.068	0.065
C09	Standard deviation	0.002	0.013	0.003	0.003	0.002	0.002
C16	Reactor grid flow coefficient	0.504	0.480	0.479	0.491	0.432	0.529
C16	Standard deviation	0.001	0.011	0.001	0.003	0.006	0.025

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
800	Air venturi pressure differential, psid	2.34	9.84	27.32	5.22	30.02	29.80	3.73	12.62	2.50
800	Standard deviation	0.09	0.25	0.56	0.13	3.36	3.43	0.10	0.64	0.06
009	Air line pressure, psid						122.2			
009	Standard deviation	1.6	3.0	1.0	2.9	5.1	6.1	3.9	5.2	3.2
010 010	Air inlet temperature, °F Standard deviation	103	102	87 1	112 9	95 1	92 1	111 5	93 5	105 4
011	Fuel air venturi pressure	6.01	5.56	5.23	5.49		4.97		5.73	5.35
041	differential, psid	0.02	0.00	0,120	3.13			0.00	• • • • • • • • • • • • • • • • • • • •	
011	Standard deviation	0.12		0.11	0.22			0.36	0.46	0.29
012	Fuel air line pressure,	135.2	128.8	125.7	129.4	123.3	121.9	128.4	131.2	125.4
012	psia Standard deviation	1.6	3.0	1.0	2.8	5.2	6.0	3.8	5.1	3.2
012	Fuel air inlet	49	44	41	36	62	55	41	41	66
010	temperature, °F		• •	• •••	•	02				
013	Standard deviation	2	1	1	2	1	5	1	. 2	
015	Burner air venturi	(b)	(b)							
	pressure differential, psid									
015	Standard deviation	(b)	(b)							
016	Burner air pressure,						122.4			
	psia									
016	Standard deviation	1.6	3.0	1.0	2.8	5.1	6.0	3.8	5.1	3.2
050	Reactor inlet air	100	101	99	102	100	100	99	99	99
050	temperature, F Standard deviation	1	0	0	0	0	0	1	0	0
054	Reactor grid air	2.42		14.47				1.64	3.65	0.97
	differential pressure,									
054	psid Standard daviation	1 0/	0.24	0 56	0 10	0 5/	0.44	0.44	ń 10	0.04
054 055	Standard deviation Reactor internal	1.84 79.5	0.34 79.8	0.56 79.5	0.19 79.4	0.54 79.7	0.44 79.7	0.44 79.4	0.18 79.3	79.4
000	pressure, psia	73.0	73.0	73.3	73.1	, 5.,	, 3.,	, , ,	, 5.0	, , ,
055	Standard deviation	0.4	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0
099	Air heater vent	214	277	290	243	520	420	364	293	387
099	temperature, °F Standard deviation	3	7	2	4	26	92	3	10	9
131	Air heater combustor	316	428	444	371	517	503	366	441	380
	temperature, °F									
131	Standard deviation	4	8	2	4	12		1	4	5
148	Air heater inlet pressure, psia	131.3	125.9	123.0	126.1	120.9	119.7	125.1	127.3	122.3
148	Standard deviation	1.3	2.5	0.9	2.4	4.5	5.3	3.4	4.4	2.8
149	Air heater venturi dif-	0.28		0.91		1.69		0.51	0.49	0.40
	ferential pressure,									
1.40	psid Standard deviation	0 01	0 02	0 02	0.02	0.65	0.22	0 02	0 07	0 01
149 CO4A	Standard deviation Combustor airflow rate,	0.01 323	0.03 625	0.03 954	0.03 462	0.65 960	0.32 953	0.03 391	0.07 711	0.01 318
COAN	lb/hr	525	023	334	402	300	333	331	, 11	310
CO4A	Standard deviation	6	2	5	4	11	10	3	3	1
CO4B	Burner airflow rate,	(b)	(b)							
COAR	lb/hr Standard doviation	(b)	(b.)	(b)	(6)	/ b)	(5)	(5)	(5)	(5)
CO4B CO4C	Standard deviation Fuel airflow rate,	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
5510	1b/hr	(5)	(5)	(5)	(5)	(5)	(5)	(0)	(5)	(5)
C 04C	Standard deviation	(b)	(d)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate,	385	684	1011	521	1014	1007	450	771	376
. 12	1b/hr	No.								

	temperature, F	- Land	A STATE OF THE PARTY OF THE PAR							engal pagaman and pagaman
099	Standard deviation	3	7	2					10	9
131	Air heater combustor temperature, °F	316	428	444	371	517	503	366	441	380
131	Standard deviation	4	8	2		12	14		4	5
148	Air heater inlet pressure, psia	131.3	125.9	123.0	126.1	120.9	119.7	125.1	127.3	122.3
148	Standard deviation	1.3	2.5	0.9	2.4	4.5	5.3		4.4	2.8
149	Air heater venturi dif- ferential pressure, psid	0.28	0.53	0.91	0.41	1.69	0.89	0.51	0.49	0.40
149	Standard deviation	0.01	0.03	0.03	0.03	0.65	0.32	0.03	0.07	0.01
CO4A	Combustor airflow rate, 1b/hr	323	625	954	462	960	953	391	711	318
CO4A	Standard deviation	6	2	5	4	11	10	3	3	1
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4	Total airflow rate, lb/hr	385	684	1011	521	1014	1007	450	771	376
C04	Standard deviation	6	3	5	4		10	5	6	3
C09	Reactor coal-air ratio								0.068	
C09	Standard deviation								0.003	
C16	Reactor grid flow coefficient	0.365	0.425	0.401	0.348	0.532	0.550	0.501	0.609	0.533
C16	Standard deviation	0.047	0.013	0.010	0.008	0.012	0.013	0.005	0.015	0.011

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

FOLDOUT FRAME

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		K1	К3	К4	К2	K7	К8	К6	K5	К9
800	Air venturi pressure	5.66	3.40	20.62	2.76	2.85	11.25	3.56	23.83	3.39
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.04 136.8 1.2 112 10 6.07	135.3 1.4 103 28	0.28 134.5 1.6 89 2 5.96	1.6 104 4	0.9 109 4		0.06 131.4 2.5 91 3 5.72	0.83 128.0 3.7 92 3 5.71	0.03 135.0 1.4 97 3 5.80
011 012	Standard deviation Fuel air line pressure,	0.12 136.9			0.12 135.6			0.21 132.1	0.45 128.9	0.12 135.1
012 013	psia Standard deviation Fuel air inlet temperature, °F	1.2 28	1.4 31	1.5 37	1.6 44	0.9 42	4.3 39	2.4 38	3.7 40	1.4 49
013 015	Standard deviation Burner air venturi pressure differential, psid	1 (b)	1 (b)	5 (b)	(b)	1 (b)	(p)	(b)	2 (b)	4 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 137.3		(b) 135.0	(b) 135.9	(b) 135.2	(b) 128.7	(b) 132.5	(b) 129.3	(b) 135.5
016 050	Standard deviation Reactor inlet air temperature, °F	1.2 200	1.4 89	1.5 99	1.6 100	0.9 100	4.3 100	2.4 100	3.7 100	1.4 101
050 054	Standard deviation Reactor grid air differential pressure, psid	0 3.28	19 1.83	19.30	0 4.21	0 3.93	0 11.09	0 4.65	0 22.43	0 5.21
054 055	Standard deviation Reactor internal	0.11 80.8	0.15 81.2	0.35 80.9	0.05 80.4	0.16 80.5	0.33 80.6	0.13 80.5	0.92 80.4	0.13 80.4
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.4 229	0.3 211	0.4 304	0.2 376	0.2 405	0.2 505	0.1 390	0.2 527	0.2 241
099 131	Standard deviation Air heater combustor temperature, °F	22 356	50 303	13 441	12 366	3 425	10 479	7 368	21 502	2 351
131 148	Standard deviation Air heater inlet pressure, psia	36 133.3	86 131.4	12 130.9	10 131.7	8 131.1	6 125.6	5 128.7	16 126.0	1 131.3
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	1.0 0.84		1.3 1.01	1.4 0.81	0.8 0.83	3.7 4.23	2.1 4.11	3.2 4.18	1.2 0.36
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.36 493	0.20 387	0.05 892	0.02 349	0.01 352	0.22 663	0.23 394	0.04 913	0.02 388
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	5 (b)	6 (b)	3 (b)	3 (b)	2 (b)	3 (b)	2 (b)	8 (b)	1 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
COAC	10/Hr Standard deviation	/61	761	/ b\	(6)	761	/ 6\	(b)	(6)	761.

	temperature, °F	and a second of the second	Sale tar Service Anna	Systemates Att City Control California	AND SECTION OF THE SECTION OF	Control of the second	na carett anne e car	-	TOTAL PROPERTY.	
099	Standard deviation	22	50	13	12	3	10	7	21	2
131	Air heater combustor temperature, °F	356	303	441	366	425	479	368	502	351
131	Standard deviation	36	86	12	10	8	6	5	16	1
148	Air heater inlet	133.3	131.4	130.9	131.7	131.1	125.6	128.7	126.0	131.3
	pressure, psia									
148	Standard deviation	1.0	1.1	1.3	1.4	8.0	3.7	2.1	3.2	1.2
149	Air heater venturi dif- ferential pressure, psid	0.84	0.49	1.01	0.81	0.83	4.23	4.11	4.18	0.36
149	Standard deviation	0.36	0.20	0.05	0.02	0.01	0.22	0.23	0.04	0.02
CO4A	Combustor airflow rate, lb/hr	493	387	892	349	352	663	394	913	388
CO4A	Standard deviation	5	6	3	3	2	3	2	8	. 1
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	645	450	955	412	415	722	455	974	449
C04	Standard deviation	7	6	4	3			3		2
C09	Reactor coal-air ratio	0.062	0.100	0.063	0.090	0.089	0.066	0.100	0.065	
C09	Standard deviation	0.003	0.003	0.009	0.007	0.002	0.003	0.004	0.002	0.011
C16	Reactor grid flow coefficient								0.302	
C16	Standard deviation	0.012	0.012	0.003	0.003	0.007	0.005	0.005	0.008	0.004

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter				Test			
chan- nel		K10	K12	K11	K14	К13	K15	K16
800	Air venturi pressure	3.69	8.17	23.60	3.07	2.19	3.34	3.46
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	0.04 136.6 1.1 97 5 5.83	134.0 2.0 97 4	2.1 90 1	0.03 136.4 0.8 99 6 5.70	0.01 136.8 0.8 100 4 5.75	0.03 136.0 0.9 95 5 5.68	0.02 131.6 0.5 96 2 6.16
011 012	differential, psid Standard deviation Fuel air line pressure,	0.08 136.7	0.15 134.2	0.20 131.1	0.06 136.4	0.07 136.8		0.03 131.7
012 013	psia Standard deviation Fuel air inlet temperature, °F	1.1 41	2.0 41	2.1 42	0.8 41	0.8 49	0.9 47	0.5 47
013 015	Standard deviation Burner air venturi pressure differential, psid	0 (b)	(b)	(b)	(b)	(b)	1 (b)	(p)
015 016	Standard deviation Burner air pressure,	(b) 137.2	(b) 134.6	(b) 131.7	(b) 136.9	(b) 137.3	(b) 136.5	(b) 132.2
016 050	psia Standard deviation Reactor inlet air	1.1 100	2.0 101		0.8 101	0.8 101	0.9 101	0.5 101
050 054	temperature, F Standard deviation Reactor grid air differential pressure,	0 5.21	0 8.84		0 3.82	0 2.93	0 3.83	0 5.05
054 055	psid Standard deviation Reactor internal	0.19 80.3	0.50 80.3		0.11 80.1		0.14 80.1	0.29 60.5
055 099	pressure, psia Standard deviation Air heater vent temperature, °F	0.2 249	0.2 276		0.1 257	0.1 215	0.2 240	0.1 240
099 131	Standard deviation Air heater combustor temperature, °F	3 362						1 351
131 148	Standard deviation Air heater inlet	3 132.7	3 130.6	4 128.1	9 132.5	5 132.8	132.2	1 128.6
148 149	pressure, psia Standard deviation Air heater venturi dif- ferential pressure,	0.9 0.407	1.7 0.568	1.8 1.258	0.7 0.448	0.6 0.331	0.7 0.364	0.4 0.381
149 CO4A	psid Standard deviation Combustor airflow rate, lb/hr	0.012 407			0.170 371			
C04A C04B		(b)					2 (b)	(b)
CO4B CO4C	Standard deviation	(b) (b)		(b)	(b)	(b) (b)	(b)	(b) (b)

1,400	temperature, °F		- 13 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	er - ar - a - a - a - a - a - a - a - a -		-	Stånten wollen in ober over	and the second s
099	Standard deviation	3	2	27	45	2	1	1
131	Air heater combustor	362	415	487	350	313	353	351
	temperature, °F							
131	Standard deviation	3	3	4	9	5	1	1
148	Air heater inlet	132.7	130.6	128.1	132.5	132.8	132.2	128.6
	pressure, psia							
148	Standard deviation	0.9			0.7			0.4
149	Air heater venturi dif-	0.407	0.568	1.258	0.448	0.331	0.364	0.381
	ferential pressure,							
	psid	0 010	0 000	0 100	0 170	0.000	0.000	0 005
149	Standard deviation			0.166				
CO4A	Combustor airflow rate, lb/hr	407	588	924		315	388	387
CO4A	Standard deviation	4				. 1	2	1
CO4B	Burner airflow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	lb/hr				4. 3	4. 3	4. 3	
CO4B	Standard deviation	(b)		(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	1b/hr		41.3		(1.)	(1.)	/ 1 \	753
CO4C	Standard deviation	(b)						
C04	Total airflow rate,	470	649	982	433	376	449	450
	1b/hr	_		_	2	1	2	1
C04	Standard deviation	5	4	5			2	1
C09	Reactor coal-air ratio			0.068				
C09	Standard deviation			0.006				
C16	Reactor grid flow	0.289	0.319	0.321	0.309	0.301	0.323	0.322
016	coefficient	0 004	0 011	0.008	0 005	0.005	0 007	0.010
C16	Standard deviation	0.004	0.011	0.000	0.005	0.005	0.007	0.010

TABLE 4. - Continued.

Data	Parameter				-	Γest			
chan- nel		ТЗА	ТЗВ	T3C	T3D	ТЗЕ	T3F	T4	T5
800	Air venturi pressure differential, psid	6.38	7.31	5.71	6.83	6.37	2.75	7.40	5.32
008 009 009 010 010	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	3.42 124.1 19.4 93 10 5.56	126.6 13.5 85 9	2.9 78 9	131.6 1.9 76 6		30.7 67 3	129.0 3.6 56 6	20.1 46 8
011 012	Standard deviation Fuel air line pressure, psia	0.80 123.9	1.07 126.2		1.34 131.1		1.67 119.7		
012 013	Standard deviation Fuel air inlet temperature, °F	19.3 81	13.5 79	2.9 74	1.9 73	4.6 72	30.6 63	3.5 52	20 . 1 37
013 015	Standard deviation Burner air venturi pressure differential, psid	14 5.95			6 1.04	9 3.18	2 4.17		5 6.32
015 016	Standard deviation Burner air pressure, psia		3.40 126.3						2.39 128.3
016 050	Standard deviation Reactor inlet air temperature, °F	19.3 93	13.5 85	2.9 78	1.9 75	4.6 76	31.2 70	3.5 57	20.1 54
050 054	Standard deviation Reactor grid air differential pressure, psid	10 1.79	9 4.85	9 1.75	5 1.51	8 3.88	3.19	6 3.63	17 21.77
054 055	Standard deviation Reactor internal pressure, psia	0.81 64.9	8.29 71.3	0.72 66.3	0.23 73.6	2.83 72.0	2.26 54.7	1.72 72.9	11.55 68.3
055 099	Standard deviation Air heater vent temperature, °F	20.4 155	18.3 107	19.8 94	17.2 101		21.7 74	10.3 101	20.0 101
099 131	Standard deviation Air heater combustor temperature, °F	56 202	24 117	16 93	6 100	14 100	5 73	23 95	16 100
131 148	Standard deviation Air heater inlet pressure, psia	109 120.2	45 122.4	15 126.5	6 127.5	13 125.8	5 116.6	18 125.8	17 125.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	18.4 0.75	12.7 0.62		1.6 0.49	3.9 0.58	29.6 0.53	3.1 0.55	19.5 0.54
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	2.31 (b)	1.09 (b)	0.19 (b)	0.14 (b)	0.18 (b)	0.18 (b)	0.19 (b)	0.18 (b)
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

.033	temperature, °F		marca ÷ /4 c.	en	K		energi Arribardo	and the second	THE PARTY OF THE P
099	Standard deviation	56		16	6	14	5	23	16
131	Air heater combustor temperature, °F	202	117	93	100	100	73	95	100
131	Standard deviation	109	45	15					17
148	Air heater inlet pressure, psia	120.2	122.4	126.5	127.5	125.8	116.6	125.8	125.4
148	Standard deviation	18.4	12.7	2.5	1.6	3.9	29.6	3.1	19.5
149	Air heater venturi dif- ferential pressure, psid	0.75	0.62	0.47	0.49	0.58	0.53	0.55	0.54
149	Standard deviation	2.31	1.09	0.19	0.14	0.18	0.18	0.19	0.18
CO4A	Combustor airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4A	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate, lb/hr	591 *	639	635	626	637	664	627	645
C04	Standard deviation	139	102	73	74	48	139	85	71
C09	Reactor coal-air ratio	0.054	0.047	0.050	0.066	0.064	0.060	0.097	0.081
C O9	Standard deviation	0.035	0.030	0.034	0.065	0.032	0.026	0.109	0.022
C16	Reactor grid flow coefficient	0.664	0.669	0.625	0.725	0.473	0.345	0.511	0.207
C16	Standard deviation	0.055	0.386	0.105	0.072	0.120	0.068	0.101	0.102

TABLE 4. - Continued.

Data	Parameter		-5	Test		
chan- nel	, r ar anever	CAS0	CAS1		CAS3	CAS4
800	Air venturi pressure	7.57	6.29	8.59	8.31	8.00
008 009 009 010 010	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure	132.9 3.4 110	132.6 2.9 27 8	128.6 6.8 110 16	101 33	128.2 18.0 100 13
011 012	differential, psid Standard deviation Fuel air line pressure,	0.34 132.7			1.11 128.5	
012 013	psia Standard deviation Fuel air inlet temperature, °F	3.3 21		6.7 29	11.3 21	18.0 41
013 015	Standard deviation Burner air venturi pressure differential, psid	5 0.73			6 10.35	
015 016	Standard deviation Burner air pressure, psia	2.96 127.4	4.70 133.2	1.44 128.9	1.23 129.0	(b) 128.6
016 050	Standard deviation Reactor inlet air temperature, °F	27.2 95	3.0 39	6.7 98	11.3 91	18.1 101
050 054	Standard deviation Reactor grid air differential pressure,	16 16.30		12 4.83	23 3.77	9 3.64
054 055	psid Standard deviation Reactor internal pressure, psia		5.43 75.5		0.71 79.3	
055 099	Standard deviation Air heater vent temperature, °F	8.6 237	12.5 122		14.9 240	11.7 256
099 131	Standard deviation Air heater combustor temperature, °F	56 355	24 110		71 353	42 371
131 148	Standard deviation Air heater inlet pressure, psia	94 129.3	19 129.2	58 126.0	123 126.0	68 125.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	2.9 0.75	2.8 (b)		10.8 0.86	
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.23 (b)	(b) (b)	0.20 (b)		0.90 (b)
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	(b)	(b)	(b) (b)	(b)	(b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b)
CO4C CO4	Standard deviation Total airflow rate,	(b) 644	(b) 655	(b) 648	(b) 655	(b) 632

	temperature, °F				Section Control	marcho.
099	Standard deviation	56	24	35	71	42
131	Air heater combustor	355	110	335	353	371
1.01	temperature, F		.			
131	Standard deviation	94	19			
148	Air heater inlet	129.3	129.2	126.0	126.0	125.4
148	pressure, psia Standard deviation	2.9	2.0	E 0	10.0	17 5
149	Air heater venturi dif-	0.75	2.8 (b)			
143	ferential pressure,	0.73	(0)	0.03	0.00	0.00
149	Standard deviation	0.23	(b)	0.20	1.17	0.90
CO4A	Combustor airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)
CO4A	Standard deviation	(b)	(b)	(b)	(b)	(<i>p</i>)
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)
CO4	Total airflow rate, lb/hr	644	655	648	655	632
C04	Standard deviation	64	47	47	68	18
C09	Reactor coal-air ratio				0.055	
C09	Standard deviation				0.036	
C16	Reactor grid flow coefficient	0.296	0.212	0.576	0.468	0.501
C16	Standard deviation	0.017	0.014	0.049	0.032	0.042

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter				Te	est			
nel		L1	L2	L3	L4	L5	L6	M1	M2
800	Air venturi pressure differential, psid	13.85	1.40	5.07	25.74	22.98	4.05	5.73	2.13
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.61 133.0 2.3 92 8 5.69	1.1 96 4	126.8 8.8 95 3	8.3 91 5	131.5 3.3 94 7	1.9 99 4	132.2 3.6 96 9	0.04 131.0 2.3 109 5
011 012	Standard deviation Fuel air line pressure,		0.07 135.6			0.24 131.7			
012 013	psia Standard deviation Fuel air inlet temperature, °F	2.2 38	1.1 36	8.7 49	8.2 40	3.1 35	1.9 48	3.6 62	2.2 52
013 015	Standard deviation Burner air venturi pressure differential, psid	1 (b)	1 (b)	5 (b)	5 (b)	1 (b)	5 (b)	6 (b)	2 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 133.3	(b) 136.3	(b) 127.1	(b) 123.7	(b) 132.2	(b) 134.5	(b) 131.7	
016 050	Standard deviation Reactor inlet air temperature, °F	2.2 101	1.1 104	8.8 104		3.1 101	1.9 103	3.6 99	2.2 101
050 054	Standard deviation Reactor grid air differential pressure, psid	1 5.61	0 1.02		0 8.20	8.18	0 2.10	9 2.83	0 1.37
054 055	Standard deviation Reactor internal pressure, psia	0.16 80.7	0.10 81.1	0.11 81.0		0.27 80.6		0.10 80.7	0.07 78.0
055 099	Standard deviation Air heater vent temperature, °F	1.0 272	0.4 187	0.6 252	0.8 558	0.3 409	0.1 227	0.8 224	2.4 178
099 131	Standard deviation Air heater combustor temperature, °F	15 405	11 260	8 367	22 550	116 483	5 331	28 310	4 249
131 148	Standard deviation Air heater inlet pressure, psia	21 130.2	16 132.6	12 124.6		37 133.2	5 131.0	57 128.4	7 127.3
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	2.0 0.90			7.2 3.60	13.6 3.62		3.1 0.32	1.9 0.42
149 CO4A	Standard deviation Combustor airflow rate, lb/hr	0.20 748	0.02 252	0.04 456	0.48 911	3.22 914	0.03 421	0.05 494	0.03 301
CO4A CO4B	Standard deviation Burner airflow rate, lb/hr	გ (ძ)	10 (b)	8 (b)	16 (b)	14 (b)	3 (b)	5 (b)	1 (b)
C04B C04C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
~~.~				16.			26.3		

,	143	Air neater venturi dif-	n''qn) O 3	1 0.3		CHARLE OF	O MARKET TO	The state of the	Sales Break
		ferential pressure,	0,50	, 0.3	1 0.3	9 3.6	0 3.6	2 0.43	3 0.32	2 0.42
	149	Standard deviation	0.20		0 0 0					
	CO4A	Combustor airflow rate,	0.20 748							
	CO4A	Standard deviation	c	1,		_				001
	CO4B	Burner airflow rate,	6 (b)	1((b)		3 16) (b)			5 (b)	
	C04B	Standard deviation	(1.)	4. 1		•		(-,	(5)	(5)
	CO4C	Fuel airflow rate,	(b) (b)	(b) (b)			(b) (b)	(b) (b)	(b) (b)	(b) (b)
	CO4C	Standard deviation	/ 1 \				` ,	(-)	(0)	(0)
	C04	Total airflow rate, lb/hr	(b) 808	(b) 322					(b) 554	(b) 360
	C04	Standard deviation	_						00.	300
	C09	Reactor coal-air ratio	6	30	14	20	14	3	5	2
	C09	Standard deviation	0.066	0.112	0.092	0.068	0.065	0.090	0.000	0.049
	C16	Reactor grid flow coefficient	0.004 0.499	0.024	11.111/	בו ווויה	11 (11)	α	^ ~~*	
	C16	Standard deviation	0.005							
	DData	On noculta								O . O T T

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m b}{
m Data}$ or results were not obtained.

FOLDOUT FRAME 2

C - Z

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		М3	M4	M5	M6	M7	M8	М9	M11	M12
800	Air venturi pressure differential, psid	3.75	13.92	12.71	3.70	1.98	6.19	6.20	3.98	12.89
800	Standard deviation	0.07	0.59	0.69	0.11	0.05	0.19	0.22	0.13	0.26
009 009	Air line pressure, psid Standard deviation	133.5	122.1 5.5	130.4	132.3	136.5 3.2	129.8 2.5	4.0	5.1	2.2
010	Air inlet temperature, °F	116	93	96	119	92	121	114	111	99
010	Standard deviation	5 74	6	5	6	4	- 4 	4	5	7
011	Fuel air venturi pressure differential, psid	5.74	4.83	5.45	5.57			5.22	5.05	5.78
011 012	Standard deviation	0.20	0.46 121.3	0.50		0.24		0.32	0.44	0.22
UIZ	Fuel air line pressure, psia	132.5	121.3	129.4	131.3	133.4	120.9	127.0	123.2	132.9
012	Standard deviation	2.6	5.4	5.3	4.4	3.1	2.5	3.9	5.0	2.2
013	Fuel air inlet temperature, °F	40	37	33	23	18	25	32	26	25
013	Standard deviation	5	2	4	3	1	3	3	1	2
015	Burner air venturi pressure differential,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
01.5	psid	()	753	71.1	/ L \	/ [.]	753	/ ៤ \	/ ៤ \	/ []
015 016	Standard deviation Burner air pressure,	(b) 133.0	(b) 121.8	(b)	(b) 131.8	(b)		(b) 128.1	(b)	(b) 133.4
010	psia pressure,	100.0	121.0	100.0	10110	100.5	123.1	22012	11000	100.1
016	Standard deviation	2.7	5.4	5.4	4.4	3.2	2.5	3.9	5.0	2.2
050	Reactor inlet air temperature, °F	102	102	102	102	102	101	102	102	102
050	Standard deviation	0	0	0	0	0	0	0	0	0
054	Reactor grid air differential pressure, psid	2.12	5.31	5.25	2.06	1.36	2.92	3.04	2.16	5.46
054	Standard deviation	0.15	0.08	0.09	0.13	0.15	0.11	0.26	0.24	0.09
055	Reactor internal pressure, psia	79.3	78.6	79.6	79.4	77.9	79.7	80.5	79.7	79.0
055	Standard deviation	0.8	3.1	0.1	0.2	1.7	0.4	0.6	0.2	1.6
099	Air heater vent temperature, °F	218	289	305	224	192	234	248	237	314
099	Standard deviation	6	9	5	6	5	5	2	6	32
131	Air heater combustor	311	439	455	329	268	350	368	350	454
131	temperature, F Standard deviation	11	11	4	7	11	9	3	10	15
148	Air heater inlet		119.6							
148	pressure, psia Standard deviation	2.3	4.9	4.7	3.8	2.6	2.1	3.4	4.4	1.9
149	Air heater venturi dif-	0.48	0.72	0.66	0.54	0.47		0.55	0.45	0.83
	ferential pressure, psid						•••			0,00
149	Standard deviation	0.04	0.06	0.05	0.04	0.04	0.06	0.04	0.02	0.06
CO4A	Combustor airflow rate, lb/hr	399	712	708	393	301	497	498	400	722
CO4A	Standard deviation	(5)	11	8	5 (L)	(1)	5	7	(1)	5
CO4B	Burner airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate,	460	766	767	454	366	556	555	456	785

CO4A	Combustor airflow rate, lb/hr	399	712	708	393	301	497	498	400	722
CO4A	Standard deviation	3	11	8	5	1	5	7	3	5
CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(h)
CO4C	Fuel airflow rate, lb/hr	(b) (b)	(b)							
C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4	Total airflow rate, lb/hr	460		767	454	366	556	555	456	785
C04	Standard deviation	4	12	9	7	3	4	8	7	б
C09	Reactor coal-air ratio	0.047	0.048	0.050	0.049	0.045	0.039			0.048
C09	Standard deviation		0.006							
C16	Reactor grid flow coefficient		0.496							
C16	Standard deviation	0.014	0.005	0.003	0.016	0.021	0.006	0.017	0.026	0.005

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter					Test			
nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
800	Air venturi pressure differential, psid	10.11	9.17	8.93	9.54	3.43	8.01	8.07	1.58
008 009 009 010 010 011	Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.87 118.8 7.7 102 10 5.51	0.42 128.1 5.3 108 6 5.11	1.23 124.4 1.9 99 5 5.09	4.5 97 1	0.10 130.0 3.1 100 5 5.32	3.0 55 5	0.22 128.7 3.2 48 1 5.31	0.18 134.9 3.1 64 22 5.82
011 012	Standard deviation Fuel air line pressure, psia	0.48 118.9	0.50 128.2	0.43 124.3		0.27 130.0		0.26 128.8	0.27 134.9
012 013	Standard deviation Fuel air inlet temperature, °F	7.7 53	5.3 45	2.0 75	4.5 64	3.1 57	3.0 52	3.1 44	3.1 46
013 015	Standard deviation Burner air venturi pressure differential, psid	8 (b)	5 (b)	7 (b)	0 (b)	4 (b)	5 (b)	(b)	1 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 119.4				(b) 130.6			(b) 135.3
016 050	Standard deviation Reactor inlet air temperature, °F	7.7 100	5.3 102	2.0 102	4.5 104	3.1 104	3.0 59	3.1 52	3.1 64
050 054	Standard deviation Reactor grid air differential pressure, psid	7 5.26	4.04	4 4.02	0 4.06	0 2.03	3.69	3.64	16 1.19
054 055	Standard deviation Reactor internal pressure, psia	0.12 60.5	0.11 80.5	0.11 78.5	0.12 80.8	0.15 80.9	0.05 79.4	0.14 79.4	0.12 79.2
055 099	Standard deviation Air heater vent temperature, °F	0.4 238	0.4 241	8.0 209	0.4 244	0.4 207	0.2 122	0.1 128	0.4 121
099 131	Standard deviation Air heater combustor temperature, °F	42 367	2 384	49 313	5 369	7 298	16 106	1 109	27 129
131 148	Standard deviation Air heater inlet pressure, psia	73 117.6	125.7	79 122 . 6	120.9	7 127.5	11 127.1	126.0	63 131.4
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	6.8 0.62	4.6 0.70	1.7 0.57	4.0 0.46	2.7 0.38	2.6 (b)	2.7 (b)	2.7 0.93
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.16 603	0.08 599	0.77 586	0.03 601	0.05 382	(b) 597	(b) 600	0.73 275
C04A C04B	Standard deviation Burner airflow rate, lb/hr	4 (b)	4 (b)	38 (b)	5 (b)	4 (b)	3 (b)	2 (b)	10 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, lb/hr	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	<u>(b)</u>	(b)	(b)

,	, , , , , , , , , , , , , , , , , , , ,	pressure, psia	ALC: NEST HAS	建築物を利用されている。			AL PACE		THE PARTY OF THE P	MEDITORY.
	148	Standard deviation	6.8		1.7	4.0	2.7	2.6	2.7	2.7
	149	Air heater venturi dif- ferential pressure, psid	0.62	0.70	0.57					
	149	Standard deviation	0.16	0.08	0.77	0.03	0.05	/ b\	/ ៤ \	0.70
	CO4A	Combustor airflow rate, lb/hr	603							
	CO4A	Standard deviation	4	4	38	5	Л	າ	2	10
	CO4B	Burner airflow rate, lb/hr	(b)	(b)	(b)	(b)	4 (b)	(b)	(b)	10 (b)
	CO4B	Standard deviation	(b)	(b)	(b)	(b.)	/ L \	(4.3	/ 1 \	
	CO4C	Fuel airflow rate, lb/hr	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)
	CO4C	Standard deviation	(b)	(b)	(b)	(b)	/ ៤ \	753	(1.)	4. 3
	C04	Total airflow rate, lb/hr	659	655	640	653	(b) 439	(b) 655	(b) 658	(b) 337
	C04	Standard deviation	6	6	37	8	Λ	2	2	10
	C09	Reactor coal-air ratio				0 046	0.047	0.046	3	10
	C09	Standard deviation	0.008	0.004	01013	0.040	0.008	0.040	0.045	0.052
	C16	Reactor grid flow coefficient	0.478	0.473	0.470	0.474	0.427	0.477	0.480	0.393
	C16	Standard deviation	0.004	0.008	0.006	0.010	0 013	0 003	0 000	0.012

(b) Continued. - Combustor input air system data

Data	Parameter				Test			
chan- nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
800	Air venturi pressure	8.73	8.55	10.61	9.91	10.25	10.90	10.88
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.56 125.0 4.0 46 8 5.41	126.1 6.8 95 10	4.0 97 3	131.3 3.2 95 6	13.4 95 8	128.9 6.2 95 6	2.5 97 3
011 012	Standard deviation Fuel air line pressure, psia	0.40 124.9		0.40 126.1	0.36 131.2	0.67 126.0		
012 013	Standard deviation Fuel air inlet temperature, °F	3.9 40		4.0 77	3.2 62	13.4 71	6.2 71	2.5 70
013 015	Standard deviation Burner air venturi pressure differential, psid	9 (b)	8 2.15	11 (b)	12 (b)	13 7.44		10 (b)
015 016	Standard deviation Burner air pressure, psia		4.77 126.5	(b) 126.8	(b) 131.6	4.46 126.5	3.36 129.3	(b) 129.7
016 050	Standard deviation Reactor inlet air temperature, F	4.0 52			3.1 100	13.5 100	6.2 100	2.5 100
050 054	Standard deviation Reactor grid air differential pressure, psid	7 5.44		2 4.20	5 3.97	9 4.00	7 4.36	1 4.29
054 055	Standard deviation Reactor internal pressure, psia	0.40 75.1		0.27 78.9	0.39 79.9	0.58 78.1	0.33 81.2	
055 099	Standard deviation Air heater vent temperature, °F	5.3 110	9.4 171	1.3 230	6.5 229	11.5 218	4.1 235	1.4 235
099 131	Standard deviation Air heater combustor temperature, °F	17 98	45 319	26 332	42 377	43 311	42 326	13 333
131 148	Standard deviation Air heater inlet pressure, psia	15 123.4	82 123.8	38 124.1	49 127.8	75 123 . 5	70 125.9	24 126.3
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	3.4 0.13		3.5 0.26	2.7 0.44	12.9 0.37	5.4 0.32	2.2 0.39
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.20 (b)	0.82 (b)	0.21 (b)	0.22 (b)	0.20 (b)	0.21 (b)	0.27 (b)
C04A C04B	Standard deviation Burner airflow rate, lb/hr	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)
C04B C04C	Standard deviation Fuel airflow rate, lb/hr	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
C04C C04	Standard deviation Total airflow rate,	(b) 671	(b) 648	(b) 696	(b) 694	(b) 697	(b) 717	(b) 715

TO THE CHARTES AND THE PERSON OF THE CHARTES AND THE CHARTES A	temperature, °F	TIFU	AVERET IN	J&27*****	CZ5	Z16	Z35	235
099	Standard deviation	17	45	5 26	5 42	2 43	42	1 2
131	Air heater combustor	98						
	temperature, °F			002	. 577	211	320	333
131	Standard deviation	15		38	49	75	70	24
148	Air heater inlet	123.4	123.8	124.1	127.8	123.5	125.9	126.3
148	pressure, psia							
149	Standard deviation	3.4				12.9	5.4	2.2
143	Air heater venturi dif-	0.13	0.82	0.26	0.44	0.37	0.32	0.39
	ferential pressure, psid							
149	Standard deviation	0.20	0 00	0 01				
CO4A	Combustor airflow rate,	(b)	0.82			-	0.21	0.27
	lb/hr	(0)	(b)	(b)	(b)	(b)	(b)	(b)
C04A	Standard deviation	(b)	(b)	(b)	(b)	(b)	/ b.\	/ L \
CO4B	Burner airflow rate,	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
0045	lb/hr	(- /	(-)	(5)	(6)	(0)	(0)	(b)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	1b/hr Standard daviation					` ,	(-/	(~)
C04C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
004	Total airflow rate, lb/hr	671	648	696	694	697	717	715
C04	Standard deviation	15	34	20	41	37	12	C
C09	Reactor coal-air ratio				0.044	0.043	U 046	6 0 047
C09	Standard deviation	0.025	0.008	0.007	0.010	0.011	0.040	0.047
C16	Reactor grid flow	0.412	0.486	0.502	0.509	0.499	0.493	0.023 0.498
C16	coefficient							
C16	Standard deviation	0.009	0.028	0.006	0.008	0.035	0.024	0.006

TABLE 4. - Continued.

Data	Parameter				Test			
chan- nel		K10	K12	К11	K14	К13	K15	K16
800	Air venturi pressure	3.69	8.17	23.60	3.07	2.19	3.34	3.46
008 009 009 010 010 011	differential, psid Standard deviation Air line pressure, psid Standard deviation Air inlet temperature, °F Standard deviation Fuel air venturi pressure differential, psid	0.04 136.6 1.1 97 5 5.83	134.0 2.0 97 4	2.1 90 1	0.8 99 6	0.8 100 4	0.9 95 5	
011 012	Standard deviation Fuel air line pressure, psia	0.08 136.7	0.15 134.2	0.20 131.1	0.06 136.4	0.07 136.8		0.03 131.7
012 013	Standard deviation Fuel air inlet temperature, °F	1.1 41	2.0 41	2.1 42	0.8 41	0.8 49	0.9 47	0.5 47
013 015	Standard deviation Burner air venturi pressure differential, psid	(b)	(p)	(b)	(b)	(b)	1 (b)	0 (b)
015 016	Standard deviation Burner air pressure, psia	(b) 137.2	(b) 134.6					
016 050	Standard deviation Reactor inlet air temperature, °F	1.1 100	2.0 101	2.1 101	0.8 101	0.8 101	0.9 101	0.5 101
050 054	Standard deviation Reactor grid air differential pressure, psid	0 5.21	0 8.84	0 20.50	0 3.82	0 2.93	0 3.83	0 5.05
054 055	Standard deviation Reactor internal pressure, psia	0.19 80.3	0.50 80.3	0.83 80.4	0.11 80.1	0.09 80.0	0.14 80.1	0.29 60.5
055 099	Standard deviation Air heater vent temperature, F	0.2 249	0.2 276	0.2 466	0.1 257	0.1 215	0.2 240	0.1 240
099 131	Standard deviation Air heater combustor temperature, °F	3 362	2 415	27 487	45 350	2 313	1 353	1 351
131 148	Standard deviation Air heater inlet pressure, psia	3 132.7	3 130.6	128.1	9 132.5	5 132.8	132.2	1 128.6
148 149	Standard deviation Air heater venturi dif- ferential pressure, psid	0.9 0.407	1.7 0.568	1.8 1.258		0.6 0.331	0.7 0.364	
149 CO4A	Standard deviation Combustor airflow rate, 1b/hr	0.012 407	0.009 588	0.166 924	0.170 371	0.009 315	0.008 388	0.005 387
CO4A CO4B	Standard deviation Burner airflow rate, 1b/hr	4 (b)	4 (b)	4 (b)	3 (b)	1 (b)	2 (b)	1 (b)
CO4B CO4C	Standard deviation Fuel airflow rate, 1b/hr	(b)	(b)	(b)	(b)	(b) (b)	(b). (b)	(b) (b)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

Total Apple Co. 17	temperature, °F	an ancome const	SHOWEL !	·····	CHARACTER I	seleint ETA	***** Z4 U	STATES CATU
099	Standard deviation	3	2	27	45	2	1	1
131	Air heater combustor	362						
	temperature, °F			,	000	010	555	221
131	Standard deviation	3	3	4	9	5	1	1
148	Air heater inlet	132.7		128.1	132.5	132.8	132 2	128.6
	pressure, psia					102.0	101.5	120.0
148	Standard deviation	0.9	1.7	1.8	0.7	0.6	0.7	0.4
149	Air heater venturi dif-	0.407	0.568	1.258	0.448	0.331	0.7	0.381
	ferential pressure,		_			0.001	0.001	0.001
1.40	psid							
149	Standard deviation	0.012	0.009	0.166	0.170	0.009	0.008	0.005
CO4A	Combustor airflow rate, lb/hr	407	588	924	371	315	388	387
CO4A	Standard deviation	4	4	4	3	1	2	1
CO4B	Burner airflow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	lb/hr	(~)	(5)	(5)	(1)	(5)	(0)	(0)
CO4B	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
CO4C	Fuel airflow rate,	(b)	(b)	(\tilde{b})	(b)	(b)	(b)	(b)
	lb/hr	` ,	()	(~)	(5)	(5)	(5)	(5)
CO4C	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C04	Total airflow rate,	À7Ó	649	982	433	376	449	450
	lb/hr			• • • •	100	0,0	773	730
C04	Standard deviation	5	4	5	3	1	2	1
C09	Reactor coal—air ratio	0.097	0.067	0.068	0.102	0.091	0.092	ก กรร์
C09	Standard deviation	0.002	0.003	0.006	0.003	0.006	0.008	0.000
C16	Reactor grid flow	0.289	0.319	0.321	0.309	0.301	0.323	0.322
	coefficient			··· -				0.022
C16	Standard deviation	0.004	0.011	0.008	0.005	0.005	0 007	0.010

(c) Combustor temperature and pressure data

Data	Parameter					Test				
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
030	Bed temperature 5 in.	1629	1636	1617	1654	3693	1636	1607	1598	1617
030	from bottom, °F Standard deviation Bed temperature 5 in.	49	20	27	27	35	21	63	19	15
031		1602	1585	1589	1639	1655	1658	1653	1633	1622
031	from bottom, F Standard deviation Bed temperature 15 in.	30	34	29	23	25	19	47	18	14
032		1571	1600	1580	1592	1608	1586	1581	1585	1585
032 033	from bottom, °F Standard deviation Bed temperature 29 in. from bottom, °F	18 (b)	23 (b)	18 (b)	14 (b)	14 (b)	12 (b)	27 (b)	9 (b)	10 (b)
033	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
034	Bed temperature 42 in.	1572	1602	1588	1601	1614	1585	1583	1591	1593
034 035	from bottom, °F Standard deviation Bed temperature 55 in.	18 1553	22 1594	17 1588	14 1600	13 1610	10 1574	18 1566	9 1585	10 1586
035	from bottom, F Standard deviation Bed temperature 67 in.	17	26	16	14	13	10	36	8	10
036		(b)	(b)	(b)	(b)	1517	1503	1465	1489	1493
036	from bottom, °F Standard deviation Bed temperature 79 in.	(b)	(b)	(b)	(b)	7	35	21	7	11
037		1545	1578	1581	1596	1597	1355	1420	1399	1433
037	from bottom, F Standard deviation Bed temperature 96 in.	16	29	14	16	12	56	20	30	7
038		1477	1402	1504	1560	1492	1251	1338	1334	1365
038 039	from bottom, °F Standard deviation Preexit gas temperature, °F	18 1280	48 1233	30 1270	21 1335	13 1344	45 1192	11 1273	18 1278	6 1305
039	Standard deviation Grid surface temperature, F	29	28	11	33	12	35	17	11	6
028		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
028	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
029		601	539	570	596	583	531	468	845	842
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure,	33 (b)	73 (b)	27 (b)	29 (b)	31 (b)	21 (b)	33 (b)	14 (b)	12 (b)
051 052	<pre>psid Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid</pre>	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
052	Standard deviation Overall bed differential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
056		3.70	5.56	3.59	3.37	2.85	1.71	1.45	1.27	1.20
056	Standard deviation Bed sample rod tempera- ture, °F	0.22	2.56	0.26	0.32	0.21	0.17	0.18	0.16	0.20
167		1624	1644	1638	1667	1706	1652	1639	1652	1641
167	Standard deviation Bed sample rod tempera- ture, F	25	26	23	21	28	14	67	16	13
168		1590	1608	1588	1607	1633	1610	1594	1619	1611
168	Standard deviation Bed sample rod tempera- ture, °F	20	22	17	14	20	12	59	14	8
169		1590	1592	1561	1569	1591	1555	1518	1550	1541
169 170	Standard deviation Bed sample rod tempera	19 59	18 65	17 66	11 52	17 60	11 86	91 83	12 66	8

	ture, °F				2001		**********	The factor of the		
168	Standard deviation	20		17	14	20	12	59	14	8
169	Bed sample rod tempera- ture, °F	1590	1592	1561	1569	1591	1555	1518	1550	1541
169	Standard deviation	19	18	17		17	11	91	12	8
170	Bed sample rod tempera- ture, °F	59	65	66	52	60	86	83	66	, 63
170	Standard deviation	0.6	2.9	4.8		3.8	1.5	4.4	1.5	0.6
171	Bed sample rod tempera- ture, °F	59	65	66	52	60	86	82	. 66	63
171	Standard deviation	0.6		4.8	3.3	4.0	1.5	4.9	1.3	0.5
172	Bed sample rod tempera- ture, °F	1583	1615	1596	1609	1625	1594	1585	1602	1602
172	Standard deviation	20	21	15	10	14	10	28	11	8
173	Bed sample rod tempera- ture, °F	1532	1545	1546	1550	1555	86	83	66	63
173	Standard deviation	18	38	12	9	12	2	5	1	1
178	Grid to port 1 bed dif- ferential pressure, psid	0.477	0.454	0.542	0.593	1.920	0.626	0.580	0.637	0.729
178	Standard deviation	0.114	0.233	0.085	0.208	3.183	0.250	0.099	0.161	0.186
179	Port 1 to port 2 bed dif- ferential pressure, psid	0.713	2.368	0.684	0.640	1.739	0.702	0.678	0.645	0.706
179	Standard deviation	0.116	3.011	0.052	0.062	2.715	0.061	0.069	0.039	0.045
180	Port 2 to port 3 bed dif- ferential pressure, psid				0.623					
180	Standard deviation	(b)	1.033	0.133	0.115	3,109	0.142	0.111	0.030	0.042
181	Port 3 to port 4 bed dif- ferential pressure, psid				0.578					
182	Standard deviation	0.269	0.760	0.110	0.148	3,653	0.001	0.001	0.001	0.004

TABLE 4. - Continued.

(c) Continued. - Combustor temperature and pressure data

			•						
Data chan—	Parameter					Test			
nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
030	Bed temperature 5 in. from bottom, °F	1617	1672	1546	1476	1605	1582	1583	1710
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	15 1618	33 1642	15 1535	18 1457	21 1588	24 1586	19 1588	40 1712
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	13 1584	46 1633	12 1539	17 (b)	17 1574	23 1582	19 1568	28 1709
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	10 (b)	17 (b)	9 (b)	(b)	12 (b)	11 (b)	11 (b)	15 (b)
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	(b) 1592	(b) 1523	(b) 1545	(b) 1481	(b) 1581	(b) 1588	(b) 1572	(b) 1715
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	10 1581	59 1601	9 1528	12 1460	12 1566	11 1579	11 1532	14 1687
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	10 1493	60 1519	11 1459	14 1396	12 1491	11 1520	10 1454	15 1613
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	11 1439	39 1462	13 1418	13 1362	11 1440	8 1472	11 1409	11 1558
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	10 1374	37 1396	13 1364	13 1313	11 1378	9 1417	13 1350	6 1492
038 039	Standard deviation Preexit gas temperature, °F	10 1390	35 1350	13 1302	13 1252	11 1315	8 1350	19 1263	4 1433
039 028	Standard deviation Grid surface temperature, °F	197 (b)	14 (b)	13 (b)	11 (b)	13 (b)	8 (b)	19 (b)	5 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b) 874	(b) 947	(b) 951	(b) 924	(b) 981	(b) 1004	(b) 1184	(b) 1019
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	17 (b)	27 (b)	12 (b)	13 (b)	14 (b)	12 (b)	14 (b)	15 (b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.13	(b) 1.00	(b) 1.13	(b) 1.22	(b) 1.18	(b) 1.07	(b) 0.90	(b) 1.00
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.22 1631	0.23 1652	0.19 1569	0.29 1502	0.23 1618	0.16 1626	0.21 1595	0.14 1739
167 168	Standard deviation Bed sample rod tempera- ture, °F	10 1599	50 1622	16 1540	13 1474	18 1580	17 1588	19 1570	27 1708
168 169	Standard deviation Bed sample rod tempera- ture, °F	[°] 9 1528	46 1547	13 1472	11 1422	17 1504	15 1508	16 1495	21 1612
169 170	Standard deviation Bed sample rod tempera-	8 (b)	46 (b)	12 (b)	35 291	13 (b)	12 (b)	12 (b)	20 (b)

167	Bed sample rod tempera- ture, °F	1631	1652	1569	1502	1618	1626	1595	1739	20
167 168	Standard deviation Bed sample rod tempera- ture, °F	10 1599								
168 169	Standard deviation Bed sample rod tempera- ture, °F	9 1528	46 1547			17 1504		16 1495	21 1612	
169 170	Standard deviation Bed sample rod tempera- ture, °F	8 (b)	46 (b)	12 (b)	35 291	13 (b)	12 (b)	12 (b)	20 (b)	
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	505 (b)	(b)	(b) (b)	(b) (b)	(b)	
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) 1599	(b) 1634	(b) 1554	(b) 1248	(b) 1589	(b) 1599	(b) 1579	(b) 1727	
172 173	Standard deviation Bed sample rod tempera- ture, °F	8 (b)	42 (b)	13 (b)	530 304	15 (b)	13 (b)	14 (b)	15 (b)	
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.41	(b) 0.44	(b) 0.55	535 0.80	(b) 0.73	(b) 0.82	(b) 0.50	(b) 0.42	
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.19 0.63	0.17 0.62	0.10 0.67	0.63 0.70	0.21 0.77	0.21 0.70	0.09 0.64	0.16 0.60	
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	0.05 0.29	0.06 0.30	0.06 0.21	0.12 0.27	0.08 0.20	0.06 0.18	0.05 0.04	0.05 0.19	
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	0.06 0.01	0.07 0.01	0.04 0.01	0.19 0.02	0.03 0.01	0.03 0.01	0.03 0.01	0.09 0.02	
182	Standard deviation	0	0	0	0.04	0	0	0	0	

 $^{
m b}{
m Data}$ or results were not obtained.

(c) Continued. - Combustor temperature and pressure data

Data chan—	Parameter				Te	st		
nel		C1	С3	C8	C11	C12	C16	C17
030	Bed temperature 5 in. from bottom, °F	1571	1634	1606	1614	1602	1594	1766
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	26 1563					20 1589	
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	21 1542	9 1589		4 1576	15 1578	20 1576	59 1700
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	11 (b)	8 (b)	20 (b)	4 (b)	16 (b)	13 (b)	56 (b)
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	(b) 1489	(b) 1580	(b) 1561	(b) 1578	(b) 1578	(b) 1578	(b) 1701
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	19 1407	11 1493	17 1478	6 1496	17 1508	13 1545	56 1639
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	13 1367	13 1446	13 1436	14 1446	20 1458	10 1498	53 1582
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	11 1317	13 (b)	11 (b)	13 (b)	22 (b)	9 (b)	47 (b)
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	12 1253	(b) 1333	(b) 1334	(b) 1337	(b) 1341	(b) 1399	(b) 1470
038 039	Standard deviation Preexit gas temperature, *F	12 1209	15 1284	8 1288	11 1289	22 1266	9 1339	41 1416
039 028	Standard deviation Grid surface temperature,	10 (b)	16 (b)	6 (b)	12 (b)	20 (b)	10 (b)	39 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b) 689	(b) 683	(b) 652	(b) 634	(b) 828	(b) 727	(b) 721
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	25 (b)	10 (b)	17 (b)	5 (b)	7 (b)	29 (b)	22 (b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.45	(b) 0.72	(b) 0.61	(b) 0.76	(b) 0.86	(b) 0.91	(b) 0.93
056 167	Standard deviation Bed sample rod temperature, F	0.11 (b)	0.16 (b)	0.08 (b)	0.11 (b)	0.10 (b)	0.17 (b)	0.17 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) 1541	(b) 1598	(b) 1572	(b) 1586	(b) 1584	(b) 1578	(b) 1717
168 169	Standard deviation Bed sample rod tempera- ture, F	16 1416	7 1454	22 1433	4 1441	12 1435	11 1431	56 1529
169	Standard deviation	15	4	17	3	10	7	49

	ture, °F	141	5 145	4 1433	3 1441	12 1435	11 1431	50 1529
169 170	Standard deviation	1	5 /	4 17	_			152
170	Bed sample rod tempera- ture, F	(b)						
170	ocandard deviation	(b)		` ,	. ,	. ` '	(b)	(b)
171	ture, °F	(b)				(b) (b)	(b) (b)	(b)
171 172	Standard deviation	(b)	(b)	753			(5)	(b)
	Bed sample rod tempera- ture, F	1519		(b) 1580	(b) 1591	(b) 1588	(b) 1588	(b) 1712
172 173	Standard deviation	17	9	18	a	1.0		
	Bed sample rod tempera- ture, °F	(b)	(b)	(b)	4 (b)	12 (b)	11 (b)	53
173 178	Standard deviation	(b)	(b.)	753			(5)	(b)
170	Grid to port 1 bed dif- ferential pressure,	0.62	(b) 0.52	(b) 0.48	(b) 0.55	(b) 0.58	(b)	(b)
170	psia					0.50	0.58	0.46
178 179	Standard deviation	0.06	0.10	0.04	0 00	0.00		
	Port 1 to port 2 bed dif- ferential pressure.	0.12	0.06	0.03	0.08 0.04	0.08 0.02	0.23	0.10
179	psia						U	0.01
180	Standard deviation	0.01	0.03	0.01	0.01	0.02	•	
	Port 2 to port 3 bed dif- ferential pressure,	(b)	(b)	(b)	(b)	0.03 (b)	0 (b)	0 (b)
180	psid				·	(-)	(5)	(0)
181	Standard deviation Port 3 to port 4 bed dif-	(b)	(b)	(b)	(b)	(b)	/ 5.\	(1.)
	recential pressure	(b)	(b)	(b)	(\tilde{b})	(b)	(b)	(b)
182	psid Standard deviation						` ,	(2)
	estination deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
hn .						(-)	(5)	(0)

^bData or results were not obtained.

FOLDOUT FRAME | TABLE 4. - Continued.

(c) Continued. – Combustor temperature and pressure data

Data	Parameter				Test			
chan- nel		D6	D7	D2	D1	D10	D3	D4
030	Bed temperature 5 in.	1642	1673	1721	1466	1478	1857	1933
030 031	from bottom, °F Standard deviation Bed temperature 5 in. from bottom, °F	19 1651	12 1665	18 1677	11 1437	13 1461	13 1816	18 1855
031	Standard deviation Bed temperature 15 in. from bottom, °F	17	9	16	7	12	15	27
032		1656	1651	1642	1460	1447	1765	1577
032	Standard deviation Bed temperature 29 in. from bottom, °F	8	6	12	4	4	19	182
033		(b)						
033	Standard deviation Bed temperature 42 in. from bottom, °F	(b)						
034		1653	1650	1642	1463	1453	1763	1681
034	Standard deviation Bed temperature 55 in. from bottom, °F	8	6	12	4	3	20	103
035		1653	1651	1642	1466	1452	1763	1681
035	Standard deviation Bed temperature 67 in. from bottom, °F	8	6	12	4	3	20	103
036		1634	1589	1529	1393	1344	1764	1666
036	Standard deviation Bed temperature 79 in. from bottom, °F	8	7	18	4	6	21	115
037		(b)	(b)	1444	1333	1271	1636	1537
037	Standard deviation Bed temperature 96 in. from bottom, °F	(b)	(b)	20	3	8	22	123
038		1467	1477	1379	1282	1212	1536	1454
038	Standard deviation Preexit gas temperature, F	41	6	20	5	11	27	106
039		1388	1427	1338	1244	1172	1483	1406
039	Standard deviation Grid surface temperature, F	51	5	20	6	11	29	100
028		(b)						
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
051	psid Standard deviation Port 1 to port 2 bed dif- ferential pressure,	(b)						
052		(b)						
052	<pre>psid Standard deviation Overall bed differential pressure, psid</pre>	(b)						
056		1.35	1.33	1.49	1.77	2.02	1.83	1.78
056	Standard deviation Bed sample rod tempera- ture, °F	0.29	0.36	0.22	0.36	0.27	0.31	0.26
167		1683	1684	1058	1453	1451	1829	1856
167	Standard deviation Bed sample rod tempera- ture, °F	12	8	31	4	11	21	29
168		1535	1875	1020	1378	1369	(b)	(b)
168	Standard deviation Bed sample rod tempera- ture, °F	168	33	164	11	19	(b)	(b)
169		1305	1304	1257	1240	1234	1290	1389
169	Standard deviation	11	6	33	3	3	60	24

	psid							- x x 24 dx (2 x x
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure,	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
052 056	psid Standard deviation Overall bed differential pressure, psid	(b) 1.35	(b) 1.33	(b) 1.49	(b) 1.77	(b) 2.02	(b) 1.83	(b) 1.78
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.29 1683	0.36 1684	0.22 1058	0.36 1453	0.27 1451	0.31 1829	0.26 1856
167 168	Standard deviation Bed sample rod tempera- ture, °F	12 1535	8 1875	31 1020	4 1378	11 1369	21 (b)	29 (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	168 1305	33 1304	164 1257	11 1240	19 1234	(b) 1290	(b) 1389
169 170	Standard deviation Bed sample rod tempera- ture, °F	11 (b)	(b)	33 (b)	3 (b)	(b)	60 (b)	24 (b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) 1325	(b) 1433	(b)	(b) 1241	(b) 1329	(b) 1533	(b) 1437
172 173	Standard deviation Bed sample rod tempera- ture, F	133 (b)	32 (b)	(b)	63 (b)	41 (b)	24 (b)	125 (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.32	(b) 0.27	(b)	(b) 0.22	(b) 0.14	(b) 0.34	(b) 0.09
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.15 5.52	0.19 6.78	(b)	0.14 8.15	0.06 8.11	0.18 8.12	0.04 8.21
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	0.03 (b)	0.17 (b)	(b)	0.08 (b)	0.03 (b)	0.05 (b)	0.02 (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
182	Standard deviation	(b)						

(c) Continued. - Combustor temperature and pressure data

Data	Parameter	Test							
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	ТВ1Н
030	Bed temperature 5 in. from bottom, °F	1586	1585	1633	1726	1744	1708	1782	1676
030	Standard deviation Bed temperature 5 in. from bottom, °F	17	17	23	31	27	52	29	269
031		1594	1582	1610	1730	1705	1676	1708	1673
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	16 (b)	16 (b)	22 (b)	33 1652	25 1683	42 1659	31 1655	230 1550
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	(b)	(b) (b)	(b)	16 (b)	19 (b)	35 (b)	16 (b)	328 (b)
033	Standard deviation Bed temperature 42 in. from bottom, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
034		1565	1573	1575	1683	1689	1683	1668	1580
034	Standard deviation Bed temperature 55 in. from bottom, °F	17	9	12	26	19	38	16	266
035		1559	1549	1533	1682	1687	1683	1665	1573
035	Standard deviation Bed temperature 67 in. from bottom, °F	16	8	9	27	19	38	16	270
036		1463	1473	1464	891	1644	1646	1589	1490
036	Standard deviation Bed temperature 79 in. from bottom, F	12	9	11	647	24	37	18	265
037		1399	(b)	1418	(b)	1592	1599	1596	(b)
037	Standard deviation Bed temperature 96 in. from bottom, °F	11	(b)	12	(b)	28	42	20	(b)
038		1321	1369	1360	1473	1525	1544	1477	1364
038	Standard deviation Preexit gas temperature,	11	11	12	69	37	45	15	257
039		1259	1313	1307	1410	1466	1491	1423	1317
039	Standard deviation Grid surface temperature,	13	11	13	75	37	44	14	233
028		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Standard deviation Overall bed differential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
056		1.77	1.45	1.32	1.90	2.07	2.34	2.35	1.44
056	Standard deviation Bed sample rod tempera- ture, °F	0.32	0.21	0.28	0.21	0.25	0.41	0.25	0.31
167		1593	1599	1609	1737	1719	1701	1742	1664
167	Standard deviation Bed sample rod tempera- ture, °F	17	11	15	32	16	33	34	272
168		1569	1573	1580	1698	1712	1735	1762	1727
168	Standard deviation Bed sample rod tempera- ture, °F	17	10	14	30	34	51	60	291
169		1470	1472	1465	1315	1349	1213	1172	1253
169	Standard deviation	16	8	14	55	30	30	70	180
170	Bed sample rod tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

167 168	Standard deviation	17		15	32	16	_ 33	34	272
	Bed sample rod tempera- ture, °F	1569	1573	1580	1698	1712	1735	1762	1727
168 169	Standard deviation Bed sample rod tempera-	17 1470	10 1472	14 1465	30 1315	34 1349	51 1213	60 1172	291 1253
	Bed sample rod tempera- ture, F							11/2	1253
169 170	Standard deviation Bed sample rod tempera- ture, °F	16 (b)	(b)	14 (b)	55 (b)	30 (b)	30 (b)	70 (b)	180 (b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)						
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) 1575	(b) 1581	(b) 1584	(b) 871	(b) 1629	(b) 1231	(b) 1450	(b) 1306
172 173	Standard deviation Bed sample rod tempera- ture, °F	17 (b)	9 (b)	12 (b)	117 (b)	27 (b)	70 (b)	69 (b)	91 (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.65	(b) 0.83	(b) 0.72	(b) 1.13	(b) 1.38	(b) 1.84	(b) 1.65	(b) 0.45
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.24 0.71	0.16 0.71	0.22 0.65	0.14 0.04	0.23 0.01	0.25 0.08	0.29 8.30	0.39 0.16
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	0.07 (b)	0.04 (b)	0.04 (b)	0.05 (b)	0.01 (b)	0.09 (b)	2.85 (b)	0.09 (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
182	Standard deviation	(b)							

bData or results were not obtained. FOLDOUT FRAME 2

Data	Parameter				Test			
chan- nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
030	Bed temperature 5 in. from bottom, °F	1908	1840	1791	1899	1875	1835	1863
030	Standard deviation Bed temperature 5 in. from bottom, F	16	12	35	19	28	40	13
031		1883	1764	1696	1857	1798	1856	1893
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	26 1857	35 1914	27 1916	20 1901	52 1932	35 1861	12 1892
032	Standard deviation Bed temperature 29 in. from bottom, F	21	11	13	18	16	39	15
033		(b)						
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	(b) 1851	(b) 1901	(b) 1905	(b) 1883	(b) 1916	(b) 1839	(b) 1871
034	Standard deviation Bed temperature 55 in. from bottom, °F	22	11	13	20	18	39	15
035		1849	1897	1899	1880	1904	1526	1862
035	Standard deviation Bed temperature 67 in. from bottom, °F	21	11	13	17	16	649	14
036		1847	1895	1896	1880	1901	1821	1837
036	Standard deviation Bed temperature 79 in. from bottom, °F	17	11	12	14	13	35	12
037		1670	1722	1688	1699	1640	1648	1674
037	Standard deviation Bed temperature 96 in. from bottom, °F	13	8	13	16	30	44	15
038		1591	1646	1616	1605	1556	1518	1576
038	Standard deviation Preexit gas temperature, *F	13	7	13	33	28	53	24
039		1532	1592	1568	. 1544	1510	1447	1517
039	Standard deviation Grid surface temperature, F	10	6	12	35	25	55	26
028		(b)						
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
052	Standard deviation Overall bed differential pressure, psid	(b)						
056		1.85	1.91	1.99	2.21	2.17	2.00	1.98
056	Standard deviation Bed sample rod tempera- ture, °F	0.16	0.21	0.09	0.41	0.13	0.07	0.42
167		1867	1828	1776	1854	1888	(b)	(b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	20 (b)	15 2367	28 2476	18 1901	18 1796	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera— ture, °F	(b) 1593	123 1674	135 1664	98 1660	70 1672	(b) (b)	(b)
169	Standard deviation	12	9	8	10	19	(b)	(b)
170		(b)						

167 168	o aniaki a deviatilili	2() 15	5 2	0 10			aran-ising
	Bed sample rod tempera- ture, °F	(b)						(b (b
168	Standard deviation	(b)	123	3 13	F 00			·
169	Bed sample rod tempera- ture, °F	1593					(b) (b)	(b)
169	Standard deviation	12	9	1 6) 10	• •	4	
170	Bed sample rod tempera- ture, °F	(b)			3 10 (b)	19 (b)	(b) (b)	(b) (b)
170 171	Standard deviation	(b)	(b)	(b)	/61	763	44.5	
	Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
171 172	Standard deviation	(b)	(b)	(b)	(b)	/ 6.\	71.5	
172	Bed sample rod tempera- ture, F	1755	1788	1766	1816	(b) 1823	(b) (b)	(b) (b)
172	Standard deviation	25	32	16	24	22	/ 1 \	4
	Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	22 (b)	(b)	(b) (b)
173 178	Standard deviation	(b)	(b)	<i>(</i>		4. 1		. ,
1/8	Grid to port 1 bed dif- ferential pressure,	0.51	(b)	(b)	(b) 0.13	(b) (b)	(b) (b)	(b)
1 70	psid						` '	(-)
178 179	Standard deviation	0.18	(b)	(L)	0.00			
1/9	Port I to port 2 bed dif-	(b)	0.26	(b) 0.27	0.23 0.14	(b)	(d)	(b)
170	ferential pressure, psid	, ,		0.27	0.14	0.16	(b)	(b)
179	Standard deviation	(b)	0.01	0 01	0.01			
180	Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b)	0.01 (b)	0.04 0.11	0.01 (b)	(b)	(b)
180	Standard deviation							
181	Port 3 to port 4 bed dif-	(b)	(b)	(b)	0.15	(b)	(b)	(b)
	ferential pressure,	(b)	(b)	(a)	0.07	(b)	(b)	(b) (b)
100	psid					•	(-,	(2)
182	Standard deviation	(b)	(b)	(b)	0.14	(b)	(b)	(b)
						` /	\~ /	(5)

^bData or results were not obtained.

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TABLE 4. - Continued.

Data	Parameter		•		Т	est			
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
030	Bed temperature 5 in. from bottom, °F	1770	1622	1823	1778	1701	1543	1688	1671
030	Standard deviation Bed temperature 5 in. from bottom, °F	17	17	62	46	19	22	12	37
031		1857	1667	1869	1824	1748	1585	1737	1751
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	22 1752	16 1613	59 1721	52 1753	21 1680	20 1508	13 1649	40 1653
032	Standard deviation Bed temperature 29 in. from bottom, °F	16	7	42	45	19	24	10	35
033		1714	1608	1668	1742	1665	1464	1619	1626
033	Standard deviation Bed temperature 42 in. from bottom, °F	12	6	34	40	18	29	9	34
034		1714	1606	1644	1734	1658	1454	1607	1617
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	8 1715	6 1617	27 1653	38 1746	17 1673	31 1470	8 1621	33 1632
035	Standard deviation Bed temperature 67 in. from bottom, F	11	6	27	35	17	32	7	33
036		1708	1616	1646	1744	1662	1412	1615	1615
036	Standard deviation Bed temperature 79 in. from bottom, °F	12	6	33	34	19	30	8	35
037		1622	1587	1637	1716	1582	1371	1512	1527
037	Standard deviation Bed temperature 96 in. from bottom, F	19	6	35	40	27	37	9	39
038		1562	1540	1593	1661	1534	1322	1443	1462
038	Standard deviation Preexit gas temperature,	17	6	37	32	20	40	9	42
039		1494	1500	1546	1608	1501	1300	1401	1414
039	Standard deviation	16	6	35	25	13	41	10	37
028	Grid surface temperature,	(b)							
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
029	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)							
051		0.43	0.84	0.48	0.81	0.70	0.57	0.60	0.46
051	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.02	0.05	0.06	0.09	0.02	0.04	0.04	0.04
052		(b)							
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.56	(b) 2.00	(b) 1.64	(b) 1.85	(b) 1.75	(b) 1.97	(b) 2.06	(b) 1.69
056	Standard deviation Bed sample rod tempera- ture, F	0.14	0.17	0.12	0.17	0.12	0.12	0.10	0.13
167		(b)							
167 168	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)							
169 170	Standard deviation Bed sample rod tempera-	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (h)_	(b)	(b)

	psid		CONTRACTOR OF THE PROPERTY OF	and the second	ν. (υ γ	***************************************	(107	ener-(D)	seemen (ED)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.56	(b) 2.00	(b) 1.64	(b) 1.85	(b) 1.75	(b) 1.97	(b) 2.06	(b) 1.69
056 167	Standard deviation Bed sample rod tempera- ture, F	0.14 (b)	0.17 (b)	0.12 (b)	0.17 (b)	0.12 (b)	0.12 (b)	0.10 (b)	0.13 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
171 172	Standard deviation Bed sample rod tempera— ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure.	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
178 179	psid Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
182	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

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m b}{
m Data}$ or results were not obtained.

TABLE 4. - Continued.

	(c) continued: - compastor	ccmp	-i acai (c and p)1 C33U1	c duti	4	
Data chan-	Parameter				Test			
nel		E19	E13A	E13B	E14	E11	E12	E15
030	Bed temperature 5 in. from bottom, °F	1754	1860	1839	1851	1637	1640	1646
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	11 1816	21 1909	21 1890	14 1911	28 1691	18 1698	35 1708
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	16 1735	20 1848	21 1827	14 1827	34 1620	24 1618	41 1631
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	12 1701	24 1823	21 1805	16 1789	25 1585	16 1573	31 1599
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	10 1684	25 1810	20 1793	17 1766	25 1568	14 1548	23 1581
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	10 1699	25 1828	20 1812	16 1783	24 1579	14 1564	20 1593
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	10 1662	27 1823	20 1807	17 1751	23 1567	13 1536	22 1588
036 037	Standard deviation Bed temperature 79 in. from bottom, F	21 1556	27 1745	21 1741	14 1664	26 1489	27 1450	18 1521
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	28 1455	32 1662	15 1676	13 1609	19 1443	27 1385	26 1449
038 039	Standard deviation Preexit gas temperature, *F	43 1409	33 1602	11 1628	11 1565	13 1426	18 1358	25 1421
039 028	Standard deviation Grid surface temperature, °F	41 (b)	33 (b)	10 (b)	12 (b)	11 (b)	10 (b)	22 (b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.49	(b) 0.53	(b) 0.64	(b) 0.59	(b) 0.76	(b) 0.77	(b) 0.80
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.06 (b)	0.05 (b)	0.09 (b)		0.10 (b)	0.05 (b)	0.10 (b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.63	(b) 1.53	(b) 1.76	(b) 1.72	(b) 1.85	(b) 1.98	(b) 1.99
056 167	Standard deviation Bed sample rod tempera- ture, F	0.18 (b)	0.04 (b)	0.18 (b)	0.18 (b)	0.11 (b)	0.15 (b)	0.05 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)

er is exist, in	ture, °F	(סי)	(b)	(b)	(b)	(b)	(b)	(b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
169 170	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
172 173	Standard deviation Bed sample rod tempera— ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
182	Standard deviation	(b)						

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TABLE 4. - Continued.

Data	Parameter		·		·	Test				
chan- nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
030	Bed temperature 5 in. from bottom, °F	1804	1695	1786	1841	1868	1788	1763	1630	1663
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	25 1925	15 1826	23 1908	24 1877	31 1896	17 1699	99 251	19 559	25 1763
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	30 1804	22 1702	31 1754	17 1814	52 1886	10 1851	108 1858	70 1701	14 1735
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	27 1774	7 1695	25 1653	16 1796	17 1866	8 1818	22 1839	19 1717	17 1767
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	29 1758	9 1684	13 1607	14 1781	13 1848	11 1791	22 1820	19 1707	17 1756
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	28 1776	9 1702	6 1625	15 1799	12 1869	10 1813	23 1840	19 1724	16 1771
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	30 1774	10 1700	7 1623	14 1796	12 1866	10 1811	24 1836	19 1718	17 1764
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	30 1773	10 1701	8 1623	14 1796	12 1867	11 1809	25 1814	18 1717	17 1764
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	30 1622	11 1619	9 1504	14 1713	12 1788	11 1667	24 1623	18 1588	17 1683
038 039	Standard deviation Preexit gas temperature,	22 1556	10 1565	22 1496	24 1629	18 1694	16 1615	16 1492	14 1518	11 1585
039 028	Standard deviation Grid surface temperature, °F	36 (b)	9 (b)	26 (b)	21 (b)	13 (b)	17 (b)	24 (b)	11 (b)	7 (b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.82	(b) 0.92	(b) 0.93	(b) 0.84	(b) 0.95	(b) 1.07	(b) 2.35	(b) 1.93	(b) 1.76
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.06 (b)	0.07 (b)	0.09 0.02	0.27 (b)	0.08 (b)	0.08 (b)	0.10 0.02	0.03 0.03	0.09 0.03
052 056	Standard deviation Overall bed differential pressure, psid	(b) 2.40	(b) 2.79	0.01 2.68	(b) 2.72	(b) 2.88	(b) 3.14	0 2.56	0 2.70	0 2.66
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.15 (b)	0.14 (b)	0.12 (b)	0.30 (b)	0.25 (b)	0.16 (b)	0.06 (b)	0.11 (b)	0.14 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

2 1.2 p. 1 4 1.2 s. 1.2 s.	psia	Clause transfer to Anti-	dates desprise and	A. SANGLANDON AN	ALMANA PARTE S		ansent menterations.	HAND THE PARTY OF	建筑和建筑	Manager and
052 056	Standard deviation Overall bed differential	(b) 2.40	(b) 2.79	0.01 2.68	(b) 2.72	(b) 2.88	(b) 3.14	0 2.56	0 2.70	0 2.66
056 167	pressure, psid Standard deviation Bed sample rod tempera- ture, °F	0.15 (b)	0.14 (b)	0.12 (b)	0.30 (b)	0.25 (b)	0.16 (b)	0.06 (b)	0.11 (b)	0.14 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera— ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

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m b}{
m Data}$ or results were not obtained.

TABLE 4. - Continued.

(c) Continued. - Combustor temperature and pressure data

Data	Parameter	Test									
chan- nel		F19	F16	F27	G2	G3	G6	G1	G5		
030	Bed temperature 5 in. from bot:om, °F	1449	1668	1840	1713	1560	1655	1714	1822		
030	Standard deviation	90	56	39	38	28	40	27	37		
031	Bed temperature 5 in. from bottom, °F	1837	1881	550	1760	1627	1716	1761	1880		
031 032	Standard deviation	16 1790	18 1813	73 1868	51 1787	37 1661	45 1727	30 1764	38 1905		
	Bed temperature 15 in. from bottom, °F										
032 033	Standard deviation Bed temperature 29 in.	14 1818	12 1845	14 1907	44 1774	22 1665	37 1720	27 1743	32 1907		
	from bottom, F					1003					
033	Standard deviation	13	15	14	53 1750	20	33	25	29		
034	Bed temperature 42 in. from bottom, °F	1806	1833	1895	1750	1648	1698	1712	1884		
034	Standard deviation	13	15	14	53	19	31	23	27		
035	Bed temperature 55 in. from bottom, °F	1825	1853	1917	1763	1667	1715	1734	1908		
035	Standard deviation	13	16	13	69	19	32	24	28		
036	Bed temperature 67 in.	1818	1846	1907	1684	1649	1667	1501	1073		
036	from bottom, F Standard deviation	12	16	13	37	20	31	25	155		
037	Bed temperature 79 in.	1817	1846	1907	1606	1580	1588	1420	1811		
037	from bottom, F Standard deviation	12	16	13	23	16	24	25	25		
037	Bed temperature 96 in.	1721	1766	1880	1555	1541	1543	1365	1750		
	from bottom, °F										
038 039	Standard deviation Preexit gas temperature,	15 1642	24 1675	16 1757	15 1510	13 1499	19 1497	24 1326	25 1690		
005	°F	1072	1073	1737	1310	1-133	1-157	1020	1030		
039	Standard deviation	12	17	12	10	12	16	24	24		
028	Grid surface temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
028	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
029	Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
029	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
051	Grid to port 1 bed dif-	2.03	2.09	2.15	3.17	3.38	3.81	3.07	3.45		
	ferential pressure, psid										
051	Standard deviation	0.07	0.10	0.10	0.13	0.18	0.16	0.11	0.12		
052	Port 1 to port 2 bed dif- ferential pressure,	(a)	(a)	(a)	(b)	(b)	(b)	(b)	(b)		
	psid										
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
056	Overall bed differential pressure, psid	3.00	3.11	3.23	1.82	1.89	1.92	1.67	1.65		
056	Standard deviation	0.12	0.23	0.26	0.16	0.11	0.17	0.12	0.12		
167	Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
167	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
168	Bed sample rod tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
168	ture, [*] F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
169	Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
160		/L\	/ L \	/L1	/٤\	/61	/ E1	/k\	/L\		
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)		

167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)							
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
171 172	Standard dev [.] ation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
182	Standard deviation	(b)							

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
030	Bed temperature 5 in. from bottom, °F	1723	1733	1551	1781	1711	1674	1599	1715	1538
030	Standard deviation	24	45	38	37	76	52	39	16	23
031	Bed temperature 5 in.	1781	1783	1597	1843	1734	1690	1672	1800	1625
031 032	from bottom, F Standard deviation Bed temperature 15 in.	31 1794	48 1792	39 1612	39 1835	85 1739	56 1706	37 1670	16 1815	27 1608
032	from bottom, F Standard deviation Bed temperature 29 in.	21	43	33	38	75	47	37	11	26
033		1797	1787	1610	1818	1730	1694	1642	1813	1591
033	from bottom, F Standard deviation Bed temperature 42 in.	17	42	31	35	71	44	35	12	23
034		1776	1763	1590	1784	1702	1667	1607	1786	1564
034	from bottom, °F Standard deviation Bed temperature 55 in. from bottom, °F	16	40	29	33	65	41	33	13	23
035		1798	1784	1609	1804	1721	1685	1627	1811	1582
035	Standard deviation Bed temperature 67 in.	16	41	31	33	66	42	34	14	24
036		1777	1681	1569	1105	1699	1657	1517	1805	1527
036 037	from bottom, °F Standard deviation Bed temperature 79 in. from bottom, °F	16 1711	37 1617	29 1486	637 1647	69 1589	44 1553	45 1410	13 1781	24 1434
037	Standard deviation Bed temperature 96 in. from bottom, °F	15	32	22	30	54	33	26	19	30
038		1672	1578	1446	1576	1529	1502	1359	1702	1394
038	Standard deviation Preexit gas temperature, F	13	29	18	27	42	26	19	28	32
039		1629	1538	1405	1522	1478	1454	1323	1639	1356
039	Standard deviation Grid surface temperature,	11	27	14	23	39	22	16	30	31
028		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
029	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051		3.27	3.20	3.29	3.54	0.30	0.91	0.85	0.75	0.63
051 052	<pre>psid Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid</pre>	0.23 (b)	0.12 (b)	0.27 (b)	0.12 (b)	0.09 1.27		0.13 1.54	0.09 1.57	0.09 1.79
052	Standard deviation	(b)	(b)	(b)	(b)	0.07	0.08	0.05	0.03	0.05
056	Overall bed differential	1.84	1.81	1.83	1.93	1.93	2.01	2.09	2.18	2.16
056	pressure, psid Standard deviation Bed sample rod tempera- ture, F	0.19	0.09	0.15	0.14	0.19	0.10	0.14	0.10	0.09
167		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

	ture, °F	(D)"	(.D.)	(D)	(b)*	(b)	(Б)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 3.27	(b) 3.20	(b) 3.29	(b) 3.54	(b) 0.30	(b) 0.91	(b) 0.85	(b) 0.75	(b) 0.63
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.23 (b)	0.12 (b)	0.27 (b)	0.12 (b)	0.09 1.27	0.26 1.33	0.13 1.54	0.09 1.57	0.09 1.79
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.84	(b) 1.81	(b) 1.83	(b) 1.93	0.07 1.93	0.08 2.01	0.05 2.09	0.03 2.18	0.05 2.16
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.19 (b)	0.09 (b)	0.15 (b)	0.14 (b)	0.19 (b)	0.10 (b)	0.14 (b)	0.10 (b)	0.09 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera— ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b) (b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b)	(b)	.(b)	(b) (b)	(b)	(b)	(b)
182	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

Data	Parameter				T	est			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
030	Bed temperature 5 in.	1532	1682	1671	1621	1659	1608	1734	1764
030	from bottom, F Standard deviation	43	45	27	34	29	84	26 1701	30
031	Bed temperature 5 in. from bottom, F	1597	1713	1705	1636	1696	1623	1781	1805
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	46 1600	48 1739	28 1718	37 1675	31 1721	88 1663	27 1790	28 1820
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	38 1597	40 1732	27 1705	29 1672	28 1722	79 1663	28 1787	25 1818
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	35 1575	38 1704	27 1676	26 1649	26 1699	77 1642	29 1761	24 1793
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	33 1593	36 1726	26 1697	23 1669	24 1723	73 1663	28 1786	22 1818
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	34 1585	36 1700	28 1580	24 1629	25 1715	76 1625	29 1772	23 1796
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	36 1511	37 1598	29 1509	25 1548	25 1656	76 1558	28 1697	25 1720
037 038	Standard deviation Bed temperature 96 in.	34 1461	34 1535	25 1460	14 1502	21 1608	66 1521	25 1644	21 1672
038 039	from bottom, °F Standard deviation Preexit gas temperature, °F	27 1411	32 1481	23 1418	10 1454	16 1555	58 1476	22 1591	16 1620
039 028	Standard deviation Grid surface temperature, F	21 (b)	29 (b)	22 (b)	(b)	13 (b)	52 (b)	20 (b)	14 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.59	(b) 0.28	(b) 0.36	(b) 0.19	(b) 0.47	(b) 0.36	(b) 0.39	(b) 0.47
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.22 1.89	0.11 1.26	0.22 1.32	0 1.37	0.19 1.44	0.20 1.50	0.18 1.54	0.22 1.58
052 056	Standard deviation Overall bed differential pressure, psid	0.03 2.15	0.02 1.83	0.06 1.90	0.03 1.81	0.08 2.05	0.06 1.95	0.03 1.87	0.03 1.91
056 167	Standard deviation Bed sample rod tempera- ture, F	0.17 (b)	0.20 (b)	0.15 (b)	0.10 (b)	0.20 (b)	0.13 (b)	0.13 (b)	0.20 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera—	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
169	ture, F Standard deviation	(b)							. /LA

•	167	Bed sample rod tempera- ture, °F	(b)							
	167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	169 170	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
	170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
	171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)							
	172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
	173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
	178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)							
	179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)						
	180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
	182	psid Standard deviation	(b)							

TABLE 4. - Continued.

(c) Continued. - Combustor temperature and pressure data

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Data chan-	Parameter					Test				
nel		Н1	H2	Н3	H4	Н5А	H5B	Н6	Н7	Н8
030	Bed temperature 5 in. from bottom, °F	1539	1640	1578	1612	1811	1839	1787	1732	1798
030 031	Standard deviation Bed temperature 5 in. from bottom, F	23 1656	7 1664	30 1574	20 1611	13 1791	2 1764	8 1820	8 1778	22 1826
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	33 1675	4 1656	31 1609	19 1638	14 1844	1 1853	17 1859	9 1825	25 1854
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	31 1688	6 1663	30 1615	17 1642	14 1852	3 1860	33 1873	9 1833	23 1859
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	31 1577	6 1614	30 1584	17 1610	14 1812	3 1817	26 1820	8 1789	23 1803
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	24 1547	6 1594	27 1620	16 1645	13 1856	3 1863	29 1856	7 1801	19 1795
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	23 1500	7 1553	29 1601	17 1625	14 1828	3 1830	40 1800	9 1756	15 1750
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	18 1458	7 1528	25 1593	14 1618	13 1808	2 1806	31 1757	8 1735	12 1729
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	13 1392	6 1478	23 1565	11 1593	12 1767	3 1770	32 1705	8 1711	11 1699
038 039	Standard deviation Preexit gas temperature, *F	9 1355	7 1441	22 1533	8 1558	12 1723	5 1725	34 1647	7 1667	10 1654
039 028	Standard deviation Grid surface temperature, °F	7 (b)	7 (b)	20 (b)	6 (b)	11 (b)	5 (b)	34 (b)	8 (d)	10 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.68	(b) 0.79	(b) 0.95	(b) 0.63	(b) 0.61	(b) 0.50	(b) 0.13	(b) 0.15	(b) 0.14
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.08 (b)	0.10 (b)	0.37 (b)	0.24 (b)	0.20 (b)	0.31 (b)	0.06 (b)	0.05 (b)	0.06 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera-	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
1.60	ture, F	5 / LA	/1.3	71.5	41.3.	71:3	763	11.1	763	763

056	Standard deviation	0.08					U.31**				į
167	Bed sample rod tempera-	(b)	(b)	(b)							
167	ture, F Standard deviation	(h)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
168	Bed sample rod tempera-	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	
	ture, °F		4		4. 3				4		
168 169	Standard deviation	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	
109	Bed sample rod tempera- ture, °F	(13)	(n)	(n)	(0)	(0)	(D)	(0)	(n)	(b)	
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	
170	Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	
170	Standard deviation	(b)	(b)	(b)							
171	Bed sample rod tempera-	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(p)	(b) (b)	(b)	
171	ture, [*] F Standard deviation	(6)	(b)	(b)	(6)	(b)	(b)	(b)	(b)	(h)	
172	Bed sample rod tempera-	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	
	ture, °F	•	` ,	` '				•	` '		
172	Standard deviation	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	
173	Bed sample rod tempera- ture, °F	(0)	(0)	(b)	(b)	(0)	(b)	(6)	(b)	(0)	
173	Standard deviation	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	
178	Grid to port 1 bed dif-	(b)	(b)	(b)							
	ferential pressure, psid										
178	Standard deviation	(b)	(b)	(b)							
179	Port 1 to port 2 bed dif-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	
	ferential pressure,										
179	psid Standard deviation	(b)	(b)	(b)							
180	Port 2 to port 3 bed dif-	(b)	(b)	(b)							
	ferential pressure,	` ,	` ,	` ,	` ,	` ,	, ,	` ,	` ,	` ,	
1.00	psid	71.3	71.3	/1.\	753	71.5	751	/ ៤ \	/ 5 \	/ 5. \	
180 181	Standard deviation Port 3 to port 4 bed dif-	(b) (b)	(b) (b)	(b) (b)							
101	ferential pressure,	(6)	(5)	(5)	(1)	(5)	(5)	(5)	(5)	(5)	
100	psid								(,)	/	
182	Standard deviation	(b)	(b)	(b)							

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

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TABLE 4. - Continued.

Data	Parameter		i			Test				
chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	н18
030	Bed temperature 5 in. from bottom, °F	1788	1740	1820	1565	1802	1622	1627	1614	1789
030	Standard deviation Bed temperature 5 in. from bottom, °F	19	9	11	15	20	28	21	30	25
031		1802	1755	1824	1617	1806	1631	1632	1625	1777
031	Standard deviation Bed temperature 15 in. from bottom, °F	19	12	12	13	23	32	22	31	21
032		1845	1835	1880	1646	1853	1651	1651	1649	1802
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	19 1850	9 1840	12 1885	11 1657	26 1860	20 1656	20 1658	30 1655	27 1809
033	Standard deviation Bed temperature 42 in. from bottom, °F	19	9	12	11	25	21	20	30	27
034		1799	1799	1840	1598	1812	1614	1623	1623	1771
034	Standard deviation Bed temperature 55 in. from bottom, °F	18	9	11	11	23	18	18	27	25
035		1802	1829	1849	1567	1839	1612	1661	1665	1815
035	Standard deviation Bed temperature 67 in. from bottom, °F	17	10	10	9	29	22	20	27	27
036		1756	1794	1803	1538	1771	1561	1640	1653	1786
036	Standard deviation Bed temperature 79 in. from bottom, °F	16	10	9	15	22	26	19	25	24
037		1734	1775	1781	1525	1738	1523	1626	1645	1764
037	Standard deviation Bed temperature 96 in. from bottom, °F	14	10	7	20	19	32	19	20	22
038		1699	1740	1742	1490	1684	1455	1592	1622	1726
038	Standard deviation Preexit gas temperature, *F	11	10	6	27	18	41	20	16	19
039		1656	1700	1700	1464	1640	1402	1547	1589	1679
039 028	Standard deviation Grid surface temperature, °F	10 (b)	11 (b)	5 (b)	30 (b)	17 (b)	40 (b)	21 (b)	14 (b)	18 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b) (b)	(b)	(p)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
052	Standard deviation Overall bed differential pressure, psid	(b)								
056		0.28	0.43	0.41	0.51	0.64	0.89	88.0	0.71	0.55
056	Standard deviation Bed sample rod tempera- ture, °F	0.09	0.10	0.10	0.09	0.12	0.11	0.33	0.38	0.30
167		(b)								
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera-	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)

167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)						
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure,	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
180 181	psid Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
182	psid Standard deviation	(b)	(b)							

FOLDOUT FRAME

TABLE 4. - Continued.

Data	Parameter			Te	st		
chan- nel		H19	H20	H23	H24	H25	H26
030	Bed temperature 5 in. from bottom, °F	1774	1795	1819	1810	1810	1793
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	28 1774	19 1798	36 1738	13 1701	16 1718	19 1704
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	28 1804	18 1833	33 1851	14 1834	15 1832	14 1810
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	30 1811	20 1840	34 1859	14 1843	15 1840	20 1818
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	31 1773	20 1802	36 1821	14 1807	15 1803	19 1784
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	28 1803	18 1844	31 1869	13 1849	14 1846	17 1825
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	30 1769	19 1816	29 1843	15 1821	15 1820	19 1801
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	27 1748	17 1799	24 1827	14 1804	14 1804	16 1787
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	25 1712	15 1761	19 1792	13 1772	12 1771	13 1756
038 039	Standard deviation Preexit gas temperature, *F	20 1668	13 1715	14 1743	12 1727	10 1727	9 711
039 028	Standard deviation Grid surface temperature, °F	18 (b)	11 (b)	14 (b)	10 (b)	9 (b)	7 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.70	(b) 0.89	(b) 0.88	(b) 0.93	(b) 0.76	(b) 0.72
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.17 (b)	0.22 (b)	0.22 (b)	0.16 (b)	0.23 (b)	0.17 (b)
167 168	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)

	ferential pressure, psid	(6)	in (in)		- LD-)	(ED)	('D')
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.70	(b) 0.89	(b) 88.0	(b) 0.93	(b) 0.76	(b) 0.72
056 167	Standard deviation Bed sample rod tempera- ture, F	0.17 (b)	0.22 (b)	0.22 (b)	0.16 (b)	0.23 (b)	0.17 (b)
167 168	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b)	(b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

(c) Continued. - Combustor temperature and pressure data

	(c) continued: - co	mbus co.	o cinp (z. aua. c	•			•		
Data chan—	Parameter					Test				
uaj		11	12	13	14	I5A	I5B	16	I7	18
030	Bed temperature 5 in. from bottom, °F	1810	1768	1818	1627	1637	1594	1800	1765	1813
030	Standard deviation Bed temperature 5 in. from bottom, °F	21	30	13	16	25	21	31	26	25
031		1834	1803	1847	1644	1668	1631	1838	1833	1858
031	Standard deviation Bed temperature 15 in. from bottom, °F	23	27	11	16	26	18	29	23	24
032		1858	1812	1836	1633	1654	1620	1843	1818	1853
032	Standard deviation Bed temperature 29 in. from bottom, °F	26	31	13	14	24	20	32	27	26
033		1867	1821	1842	1639	1661	1625	1851	1828	1861
033	Standard deviation Bed temperature 42 in. from bottom, °F	26	31	13	14	24	20	32	28	26
034		1819	1783	1798	1598	1623	1593	1807	1790	1817
034	Standard deviation Bed temperature 55 in. from bottom, °F	28	28	12	11	20	17	28	24	24
035		1865	1828	1823	1607	1653	1630	1853	1835	1834
035	Standard deviation Bed temperature 67 in. from bottom, °F	27	30	13	10	21	19	33	24	27
036		1827	1808	1784	1586	1627	1611	1825	1814	1790
036	Standard deviation Bed temperature 79 in. from bottom, °F	31	28	12	9	18	15	28	23	23
037		1794	1795	1763	1577	1612	1602	1803	1800	1768
037	Standard deviation Bed temperature 96 in. from bottom, °F	36	25	10	12	14	12	24	19	20
038		1734	1764	1731	1556	1583	1580	1761	1772	1740
038	Standard deviation Preexit gas temperature,	44	19	9	18	10	8	19	15	16
039		1668	1721	1681	1519	1536	1539	1705	1729	1692
039	Standard deviation Grid surface temperature,	50	16	7	23	4	6	17	13	14
028		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
052	Standard deviation Overall bed differential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
056		0.76	0.65	0.27	0.27	0.44	0.58	0.55	0.76	0.56
056	Standard deviation Bed sample rod tempera- ture, F	0.11	0.18	0.05	0.11	0.02	0.07	0.08	0.29	0.08
167		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
167 168	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera— ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(þ)	(b)

056	Overall bed differential	0.76	0.65	0.27	0.27	0.44	0.58	0.55	0.76	0.56
056 167	pressure, psid Standard deviation Bed sample rod tempera- ture, °F	0.11 (b)	0.18 (b)	0.05 (b)	0.11 (b)	0.02 (b)	0.07 (b)	0.08 (b)	0.29 (b)	0.08 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)						
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)								
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure,	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
180 181	psid Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
182	psid Standard deviation	(b)								

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

Data	Parameter					Test				
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
030	Bed temperature 5 in. from bottom, °F	1663	1613	1671	1795	1721	1763	1840	1606	1687
030 031	Standard deviation Bed temperature 5 in. from bottom, F	43 1665	14 1626	26 1661	26 1824	49 1769	30 1763	24 1864	26 1629	5 1707
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	45 1674	13 1648	28 1747	25 1824	55 1806	36 1835	27 1833	23 1650	7 1690
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	38 1680	9 1654	30 1754	25 1830	38 1815	36 1841	17 1837	28 1656	5 1695
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	38 1640	9 1620	31 1720	25 1790	39 1780	37 1803	16 1794	28 1620	5 1652
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	34 1622	8 1654	28 1762	23 1799	34 1819	34 1845	16 1796	26 1647	8 1638
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	39 1517	9 1580	29 1733	26 1716	36 1788	36 1810	18 1713	27 1594	12 1547
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	38 1487	10 1554	28 1718	23 1694	33 1773	33 1790	24 1697	23 1571	9 1527
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	36 1421	10 1512	26 1690	21 1656	30 1747	30 1759	26 1662	20 1544	8 1483
038 039	Standard deviation Preexit gas temperature, F	31 1370	11 1476	21 1654	17 1613	24 1710	25 1723	22 1615	16 1508	8 1433
039 028	Standard deviation Grid surface temperature,	27 (b)	14 (b)	20 (b)	13 (b)	21 (b)	21 (b)	18 (b)	14 (b)	8 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
051 052	<pre>psid Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid</pre>	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.95	(b) 1.13	(b) 0.60	(b) 0.52	(b) 0.24	(b) 0.41	(b) 0.47	(b) 0.41	(b) 0.56
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.17 (b)	0.28 (b)	0.45 (b)	0.22 (b)	0.18 (b)	0.26 (b)	0.07 (b)	0.20 (b)	0.07 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)_	(b)	(b)

107	ture, °F	(Б)	(b)	(Б)	(b)	(b)	(Б)	(b)	(b)"	(b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)								
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)							
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)
182	Standard deviation	(b)								

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

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TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		К1	К3	К4	K2	K7	К8	K6	K5	К9
030	Bed temperature 5 in. from bottom, °F	1534	1816	1775	1699	1692	1662	1848	1812	1832
030 031	Standard deviation Bed temperature 5 in.	37 1741	15 1671	17 1603	10 1562	14 1522	15 1525	21 1709	13 1669	17 1757
031 032	from bottom, °F Standard deviation Bed temperature 15 in. from bottom, °F	31 1679	20 1881	17 1785	7 1705	9 1685	14 1677	16 1857	20 1808	12 1845
032 033	Standard deviation Bed temperature 29 in.	28 1690	17 1894	28 1788	9 1714	8 1693	15 1681	23 1867	14 1813	17 1857
033 034	from bottom, °F Standard deviation Bed temperature 42 in. from bottom, °F	28 1643	17 1848	29 1753	9 1679	8 1658	15 1648	22 1821	15 1777	17 1814
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	25 1691	18 1898	27 1795	9 1714	7 1697	13 1688	23 1869	13 1821	16 1831
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	25 1533	19 1753	29 1775	9 1595	8 1575	15 1654	22 1801	14 1795	22 1729
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	34 1458	29 1682	31 1739	11 1567	9 1536	16 1604	33 1742	14 1774	18 1698
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	41 1370	33 1595	24 1694	14 1530	5 1492	13 1568	33 1684	12 1744	14 1659
038 039	Standard deviation Preexit gas temperature,	51 1322	39 1520	14 1649	17 1484	3 1442	11 1523	35 1616	9 1703	12 1604
039 028	Standard deviation Grid surface temperature,	48 (b)	40 (b)	13 (b)	19 (b)	3 (b)	9 (b)	32 (b)	9 (b)	9 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)						
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.78	(b) 1.70	(b) 1.50	(b) 1.86	(b) 2.15	(b) 2.06	(b) 1.95	(b) 1.60	(b) 1.42
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.30 (b)	0.31 (b)	0.41 (b)	0.12 (b)	0.36 (b)	0.37 (b)	0.20 (b)	0.38 (b)	0.21 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera-	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)

056 167	Standard deviation Bed sample rod tempera- ture, °F	0.30 (b)	0.31 (b)	0.41 (b)	0.12 (b)	0.36 (b)	0.37 (b)	0.20 (b)	0.38 (b)	0.21 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)						
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)								
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b)								
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)								
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)							
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)						
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
182	Standard deviation	(b)								

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

Data chan-	Parameter				Test	:		
nel		K10) K12	2 K11	L K14	K13	K15	K16
030	Bed temperature 5 in. from bottom, °F	1864	1664	1878	1852	1691	1875	1857
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	1755						
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	1872						
032 033	Standard deviátion Bed temperature 29 in from bottom, °F	6 1885				16 1703	9 1883	2 1874
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	6 1843				17 1669	9 1840	2 1836
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	6 1887	35 1685			15 1692	10 1888	2 1882
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	7 1772	35 1640		21 1745	17 1585	9 1786	2 1824
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	11 1729	33 1604	26 1837	24 1720	16 1561	15 1731	3 1766
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	7 1683	32 15 _, 79	25 1802	23 1684	14 1524	14 1672	3 1715
038 039	Standard deviation Preexit gas temperature,	6 1626	31 1540	25 1755	20 1628	13 1475	15 1605	3 1653
039 028	Standard deviation Grid surface temperature,	6 (b)	29 (b)	27 (b)	15 (b)	14 (b)	12 (b)	4 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.55	(b) 1.75	(b) 1.40	(b) 1.41	(b) 1.41	(b) 1.69	(b) 1.76
056 167	Standard deviation Bed sample rod temperature, °F	0.10 (b)	0.42 (b)	0.38 (b)	0.18 (b)	0.14 (b)	0.17 (b)	0.34 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
1.69	Standard days at time							-

052	Standard deviation Overall bed differential pressure, psid	(b) 1.55	(b) 1.75	(b) 1.40	(b) 1.41	(b) 1.41	(b) 1.69	(b) 1.76
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.10 (b)	0.42 (b)	0.38 (b)	0.18 (b)	0.14 (b)	0.17 (b)	0.34 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)						
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b) .	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
182	psid Standard deviation	(b)						

Data	Parameter				Ţ	est			
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
030	Bed temperature 5 in.	1451	1641	1536	1620	1662	1304	1714	1642
030 031	from bottom, °F Standard deviation Bed temperature 5 in. from bottom, °F	605 1541	460 1782	493 1696	388 1761	378 1758	558 1417	217 1746	275 1662
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	597 1545	352 1763	372 1669	383 1777	302 1770	535 1431	202 1770	312 1657
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	549 1555	357 1783	377 1681	299 1790	300 1772	540 1469	196 1776	329 1669
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	514 1533	262 1752	307 1638	262 1774	281 1732	495 1486	194 1736	326 1640
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	480 1584	234 1786	301 1670	173 1818	255 1776	396 1547	176 1778	298 1678
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	444 1550	246 1742	313 1623	166 1781	243 1768	387 1472	172 1714	300 1599
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	405 1465	249 1631	366 1488	168 1654	217 1645	356 1385	135 1672	272 1553
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	366 1381	227 1542	349 1373	117 1554	216 1547	351 1261	123 1623	275 1494
038 039	Standard deviation Preexit gas temperature, °F	344 1335	225 1515	359 1360	100 1543	247 1525	351 1229	128 1574	285 1436
039 028	Standard deviation Grid surface temperature, °F	325 (h)	211 (b)	339 (b)	95 (b)	228 (b)	332 (b)	128 (b)	287 (b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) 0.87	(b) 1.14	(b) 2.38	(b) 4.70	(b) 8.18	(b) (b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	0.27 4.40	0.73 5.16	0.85 5.07	0.92 8.08	2.09 4.10	(b)	(b)	(b) (b)
052 056	Standard deviation Overall bed differential pressure, psid	2.70 1.30	2.91 1.79	2.69	0.88 2.17	3.13 2.35	(b) 1.86	(b) 1.56	(b) 1.78
056 167	Standard deviation Bed sample rod tempera- ture, F	0.40 (b)	0.25 (b)	0.48 (b)	0.44 (b)	0.36 (b)	0.47 (b)	0.43 (b)	0.38 (b)
167 168	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
169	Standard deviation	(b)	(b)	(b)	(b)	(þ)	(b).	(b).	(h)

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167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
170 171	Standard deviation Bed sample rod tempera- ture, "F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
180 181	psid Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

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TABLE 4. - Continued.

			•		p.	0004.0	aucu		
Data chan-	Parameter -				1	Γest			
nel		L1	L2	L3	L4	L5	L6	Ml	M2
030	Bed temperature 5 in. from bottom, °F	1569	1626	1704	1709	1705	1754	1619	1639
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	38 1628							
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	34 1678					21 1823	26 1680	
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	28 1695	13 1700				22 1864	26 1689	65 1695
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	29 1651	20 1650				24 1815	26 1596	65 1559
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	26 1690	24 1648		14 1855	30 1834	22 1847	24 1576	44 1505
035 036	Standard deviátion Bed temperature 67 in. from bottom, °F	27 1626	20 1562	22 1763	15 1846	26 1803	24 1762	24 1482	39 1410
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	36 1583	15 1542	20 1694	14 1826	41 1779	25 1728	24 1440	32 1379
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	42 1504	12 1480	19 1125	14 1781	45 1747	23 1690	24 1394	27 1346
038 039	Standard deviation Preexit gas temperature, F	60 · 1482	27 1437	543 1571	18 1735	46 1708	23 1641	28 1361	24 1313
039 028	Standard deviation Grid surface temperature,	54 (b)	12 (b)	14 (b)	20 (b)	46 (b)	20 (b)	28 (b)	23 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 1.05	(b) 1.33	(b) 1.45	(b) 1.28	(b) 0.93	(b) 0.82	(b) 0.19	(b) 0.32
056 167	Standard deviation Bed sample rod temperature, F	0.21 (b)	0.13 (b)	0.30 (b)	0.32 (b)	0.22 (b)	0.14 (b)	0.12 (b)	0.08 (b)
167 168	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
168	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b)	(b) ·	(b)	(b)	(b)	(b)	(b)
169	Standard deviation		Fa. 3	44.4					

•	168	Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(D)	e(cos)
	168 169	Standard deviation Bed sample rod tempera- ture, F	(b)	(b) (b)	(b) ·	(b)	(b)	(b)	(b)	(b)
	169 170	Standard deviation Bed sample rod tempera-	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
	170 171	ture, °F Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
	171 172	Standard deviation Bed sample rod tempera- ture, °F	(b)							
	172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
	173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
	179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure,	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
	180 181	<pre>psid Standard deviation Port 3 to port 4 bed dif- ferential pressure,</pre>	(b) (b)	(b)	(b)	(b) (b)	(b)	(p) -	(b) (b)	(b)
	182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) .	(b)	(b)

 ${}^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		МЗ	M4	M5	M6	M7	M8	M9	M11	M12
030	Bed temperature 5 in. from bottom, °F	1800	1789	1795	1806	1645	1577	1591	1803	1776
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	26 1826								
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	28 1869	25 1855		15 1873			21 1661	26 1870	8 1840
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	27 1884	19 1857	14 1854	17 1889	21 1698		25 1681	28 1884	11 1842
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	27 1805	17 1812	14 1810	17 1836	21 1652	16 1628	25 1642	27 1835	11 1803
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	31 1731	15 1843	. 12 1842	14 1787	17 1565	15 1618	23 1649	23 1868	10 1849
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	32 1608	14 1788	13 1790	11 1673	18 1465	15 1505	30 1524	26 1691	11 1797
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	30 1554	12 1755	11 1763	10 1636	25 1440	17 1463	20 1480	22 1626	10 1750
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	32 1502	13 1711	10 1731	12 1603	32 1414	14 1426	16 1441	20 1567	9 1710
038 039	Standard deviation Preexit gas temperature,	34 1458	19 1670	8 1696	15 1567	37 1384	11 1391	13 1404	18 1521	11 1666
039 028	Standard deviation Grid surface temperature, °F	34 (b)	23 (b)	7 (b)	17 (b)	35 (b)	7 (b)	11 (b)	19 (b)	13 (b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.46	(b) 0.41	(b) 0.51	(b) 0.60	(b) 0.73	(b) 0.67	(b) 0.85	(b) 0.99	(b) 0.87
056 167	Standard deviation Bed sample rod temperature, F	0.19 (b)	0.13 (b)	0.14 (b)	0.16 (b)	0.15 (b)	0.23 (b)	0.28 (b)	0.27 (b)	0.18 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
169	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)

169 170	Standard deviation Bed sample rod tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
170	ture, °F		(5)							• •
170	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
171	Bed sample rod tempera- ture, °F	(D)	(D)	(0)	(D)	(B)	(0)	(D)	(0)	(0)
171	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
172	Bed sample rod tempera- ture, °F		• •							(b)
172	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
173	Bed sample rod tempera- ture, °F	(D)	(D)	(D)	(D)	(a)	(0)	(0)	(0)	(n)
173	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
178	Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
178	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
179	Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
179	Standard deviation	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
180	Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
180	Standard deviation	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
181	Port 3 to port 4 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
182	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

Data	Parameter	•			T	est			
chan— nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
030	Bed temperature 5 in. from bottom, °F	1766	1776	1781	1782	1805	1822	1794	1831
030	Standard deviation Bed temperature 5 in. from bottom, °F	33	41	51	27	39	21	16	44
031		1796	1806	1808	1801	1822	1761	1745	1816
031	Standard deviation Bed temperature 15 in. from bottom, °F	31	26	46	18	40	26	31	43
032		1845	1857	1865	1862	1865	1864	1845	1860
032	Standard deviation Bed temperature 29 in. from bottom, °F	30	28	49	19	39	22	14	44
033		1846	1854	1865	1862	1868	1860	1843	1830
033	Standard deviation Bed temperature 42 in. from bottom, °F	30	25	45	19	42	22	13	38
034		1789	1807	1798	1815	1817	1803	1798	1773
034	Standard deviation Bed temperature 55 in. from bottom, °F	36	22	58	17	38	26	12	34
035		1836	1839	1829	1848	1829	1834	1837	1762
035	Standard deviation Bed temperature 67 in. from bottom, °F	33	25	48	18	42	28	13	52
036		1776	1768	1725	1754	1669	1720	1740	1593
036	Standard deviation Bed temperature 79 in. from bottom, °F	42	24	52	14	30	34	13	45
037		1732	1738	1673	1715	1626	1666	1695	1553
037	Standard deviation Bed temperature 96 in. from bottom, °F	56	21	61	11	26	41	12	43
038		312	190	276	469	171	320	694	488
038	Standard deviation Preexit gas temperature, F	303	116	200	505	15	134	431	234
039		1610	1662	1568	1636	1543	1562	1618	1477
039	Standard deviation Grid surface temperature, °F	94	16	68	9	23	53	9	41
028		(b)							
028 029	Standard deviation Grid cap surface tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
051 052	<pre>psid Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid</pre>	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
052	Standard deviation Overall bed differential pressure, psid	(b)							
056		0.76	0.85	0.85	1.00	1.26	0.79	1.01	1.32
056	Standard deviation Bed sample rod tempera- ture, °F	0.18	0.19	0.10	0.30	0.17	0.13	0.27	0.18
167		(b)							
167 168	Standard deviation Bed sample rod tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, F	(b)							
169	Standard deviation	(b)	(b)	(b)	(b)	(b)	(þ)	(b)	(b)

	ferential pressure,	en e		California			The second second	The state of the s	A PARTIES AND A
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.76	(b) 0.85	(b) 0.85	(b) 1.00	(b) 1.26	(b) 0.79	(b) 1.01	(b) 1.32
056 167	Standard deviation Bed sample rod tempera- ture, °F	0.18 (b)	0.19 (b)	0.10 (b)	0.30 (b)	0.17 (b)	0.13 (b)	0.27 (b)	0.18 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
169 170	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
170 171	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

FOLDOUT FRAME 2

TABLE 4. - Continued.

(c) Continued. - Combustor temperature and pressure data

Data chan-	Parameter				Test			
nel		T6A	T6B	T7A	T7B	T7C	T7D1	T7D2
030	Bed temperature 5 in. from bottom, °F	1801	1743	1810	1813	1757	1775	1780
030	Standard deviation Bed temperature 5 in. from bottom, °F	44	116	26	53	133	52	20
031		1574	1530	1749	1751	1807	1826	1843
031	Standard deviation Bed temperature 15 in. from bottom, °F	42	118	41	53	117	47	23
032		1863	1841	1859	1852	1841	1858	1869
032	Standard deviation Bed temperature 29 in. from bottom, °F	45	105	24	51	114	59	18
033		1870	1847	1856	1849	1842	1863	1876
033	Standard deviation Bed temperature 42 in. from bottom, °F	44	100	23	50	127	58	17
034		1816	1791	1808	1801	1785	1812	1831
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	49 1852	108 1841	22 1859	48 1839	118 1813	62 1861	16 1881
035	Standard deviation Bed temperature 67 in. from bottom, °F	51	101	24	52	117	64	19
036		1772	1757	1835	1780	1741	1816	1875
036	Standard deviation Bed temperature 79 in. from bottom, °F	60	95	47	65	112	83	19
037		1725	1699	1801	1727	1704	1761	1869
037	Standard deviation Bed temperature 96 in. from bottom, °F	72	119	81	59	112	89	21
038		1637	329	1730	1675	1659	1701	1790
038	Standard deviation Preexit gas temperature, *F	186	428	87	63	122	98	17
039		1630	1594	1675	1631	1617	1655	1729
039 028	Standard deviation Grid surface temperature, °F	97 (b)	145 (b)	81 (b)	66 (b)	125 (b)	99 (b)	14 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
052	Standard deviation Overall bed differential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)
056		1.13	1.13	2.04	1.37	0.37	1.58	2.18
056	Standard deviation Bed sample rod tempera- ture, °F	0.26	0.27	0.45	0.44	0.24	0.47	0.32
167		(b)	(b)	(b)	(b)	(b)	(b)	(b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
169		(b)	(b)	(b)	(b)	(b)	(b)	(b)
169	Standard deviation Bed sample rod tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
170		(b)	(b)	(b)	(b)	(b)	(b)	(b)

052	ferential pressure, psid	(·D:)	www.VDJ	(-D)	****(FU)***		egyes/1011/es	
052 056	Standard deviation Overall bed differential	(b) 1.13	(b) 1.13	(b) 2.04	(b) 1.37	(b) 0.37	(b) 1.58	(b) 2.18
056 167	pressure, psid Standard deviation Bed sample rod tempera-	0.26 (b)	0.27 (b)	0.45 (b)	0.44 (b)	0.24 (b)	0.47 (b)	0.32 (b)
167 168	ture, °F Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
169 170	Standard deviation Bed sample rod tempera—	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
170 171	ture, °F Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
178 179	psid Standard deviation Port 1 to port 2 bed dif- ferential pressure,	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
179 180	<pre>psid Standard deviation Port 2 to port 3 bed dif- ferential pressure,</pre>	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
180 181	<pre>psid Standard deviation Port 3 to port 4 bed dif- ferential pressure,</pre>	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
182	psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

FOLDOUT FRAME 2

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TABLE 4. - Continued.

(c) Continued. - Combustor temperature and pressure data

Data chan-	Parameter		7100		Test		
nel		19	I10A	I10B	111	112	113
030	Bed temperature 5 in. from bottom, °F	1588	1598	1559	1581	1612	1776
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	28 1627		_		34 1636	19 1794
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	29 1628		9 1587		29 1666	30 1846
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	28 1636		6 1592			17 1859
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	29 1599	20 1574	6 1551			18 1813
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	25 1604	22 1567	7 1556	13 1620		13 1863
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	23 1585	27 1544	12 1530	10 1599	31 1651	18 1826
036 037	Standard deviation Bed temperature 79 in. from bottom, °F	24 1581	23 1534	10 1518	9 1588	29 1631	17 1793
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	24 1574	22 1516	8 1494	9 1558	27 1596	14 1741
038 039	Standard deviation Preexit gas temperature, °F	26 1548	23 1482	5 1454	10 1508	25 1547	12 1692
039 028	Standard deviation Grid surface temperature, °F	28 (b)	22 (b)	2 (b)	8 (b)	26 (b)	16 (b)
028 029	Standard deviation Grid cap surface tempera- ture, F	(b) (b)	(b)	(b)	(b)	(b)	(b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
051 052	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)	(b) (b)
052 056	Standard deviation Overall bed differential pressure, psid	(b) 0.60	(b) 0.59	(b) 0.67	(b) 0.78	(b) 0.61	(b) 0.54
056 167	Standard deviation Bed sample rod tempera- ture, F	0.05 (b)	0.04 (b)	0.02 (b)	0.07 (b)	0.10 (b)	0.09 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
169 1 70	Standard deviation Red sample rod tempora	(b)	(b)	(b)	(b)	(b)	(b)

n na company ny fivon	ture, °F	and the National States	month Dil	and the Asia	(.n.)	منده (۱۳۵۰) د ر	(0)
02 05	9 Standard deviation 1 Grid to port 1 bed dif- ferential pressure,	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
05 05	Port 1 to port 2 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
05 05		(b) 0.60	(b) 0.59	(b) 0.67	(b) 0.78	(b) 0.61	(b) 0.54
05 16	6 Standard deviation	0.05 (b)	0.04 (b)	0.02 (b)	0.07 (b)	0.10 (b)	0.09 (b)
16 16	7 Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
16 16	8 Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
16 17	9 Standard deviation	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)
17 17	O Standard deviation	(b) (b)	(b)	(b)	(p)	(b)	(b)
17 17	1 Standard deviation	(b) (b)	(p)	(b)	(p)	(b)	(b)
17 17	2 Standard deviation	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
17 178	3 Standard deviation 8 Grid to port 1 bed dif- ferential pressure,	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
17 17	9 Port 1 to port 2 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
17 18	O Port 2 to port 3 bed dif- ferential pressure,	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
18 18	Port 3 to port 4 bed dif- ferential pressure,	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
18	psid 2 Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)

FOLDOUT, FRAME 2

FOLDOUT FRAME TABLE 4. - Continued.

(c) Concluded. - Combustor temperature and pressure data

Data chan-	Parameter			Test		
nel		CASO	CAS1	CAS2	CAS3	CAS4
030	Bed temperature 5 in. from bottom, °F	1745	1719	1773	1706	1733
030 031	Standard deviation Bed temperature 5 in. from bottom, °F	117 1773	78 1767	47 1810	183 1770	128 1836
031 032	Standard deviation Bed temperature 15 in. from bottom, °F	183 1773	103 1791	61 1827	200 1779	119 1817
032 033	Standard deviation Bed temperature 29 in. from bottom, °F	201 1783	118 1797	66 1832	211 1789	82 1837
033 034	Standard deviation Bed temperature 42 in. from bottom, °F	204 1735	120 1754	67 1789	198 1743	78 1792
034 035	Standard deviation Bed temperature 55 in. from bottom, °F	209 1764	127 1803	68 1814	178 1762	75 1841
035 036	Standard deviation Bed temperature 67 in. from bottom, °F	205 1684	120 1736	75 1728	187 1678	77 1751
036 037	Standard deviation Bed temperature 79 in. from bottom, F	208 1634	122 1647	75 1680	171 1638	96 1665
037 038	Standard deviation Bed temperature 96 in. from bottom, °F	225 1570	140 1578	75 1630	163 1591	102 1601
038 039	Standard deviation Preexit gas temperature, *F	246 1520	167 1528	87 1586	159 1551	125 1556
039 028	Standard deviation Grid surface temperature, °F	227 (b)	164 (b)	87 (b)	154 (b)	120 (b)
028 029	Standard deviation Grid cap surface tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
029 051	Standard deviation Grid to port 1 bed dif- ferential pressure,	(b)	(b)	(b) (b)	(b)	(b) (b)
051 052	psid Standard deviation Port 1 to port 2 bed dif- ferential pressure,	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
052 056	psid Standard deviation Overall bed differential pressure, psid	(b) 1.69	(b) 2.11	(b) 1.23	(b) 0.89	(b) 1.70
056 167	Standard deviation Bed sample rod tempera- ture, F	0.35 (b)	0.34 (b)	0.31 (b)	0.69 (b)	0.35 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
169	Standard deviation	(<u>b</u>)	(b)	(b)	(b)	(b)

	pressure, psid	and the second second	errano e e e e e e e e e e e e e e e e e e e	MATERIA.		ST SOLA
056 167	Standard deviation Bed sample rod tempera- ture, F	0.35 (b)	0.34 (b)	0.31 (b)	0.69 (b)	0.35 (b)
167 168	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)
168 169	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)
169 170	Standard deviation Bed sample rod tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)
170 171	Standard deviation Bed sample rod tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b)
171 172	Standard deviation Bed sample rod tempera— ture, F	(b)	(b) (b)	(b)	(b) (b)	(b)
172 173	Standard deviation Bed sample rod tempera- ture, F	(b)	(b)	(b)	(b)	(b)
173 178	Standard deviation Grid to port 1 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)
178 179	Standard deviation Port 1 to port 2 bed dif- ferential pressure, psid	(b) (b)	(b)	(b)	(b)	(b)
179 180	Standard deviation Port 2 to port 3 bed dif- ferential pressure, psid	(b)	(b) (b)	(b)	(b)	(b)
180 181	Standard deviation Port 3 to port 4 bed dif- ferential pressure, psid	(b)	(b)	(b)	(b)	(b)
182	Standard deviation	(b)	(b)	(b)	(b)	(b)

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

FOLDOUT FRAME 2

TABLE 4. - Continued.

(d) Combustor wall temperature data

Data chan						Test				
nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
026	Port 6 wall temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
026 027	Standard deviation Port 4 wall temperature, °F	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
027 028	Standard deviation Port 1 wall temperature, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 317	(b) 273	(b) 254	(b) 246	(b) 279	(b) 425	(b) 453	(b) 518	(b) 534
040 041	Standard deviation Combustor bottom deep temperature, °F	54 962	82 927	67 944	63 987	50 1042	27 887	9 930	24 1073	5 1080
041 042	Standard deviation Combustor top shallow temperature, °F	. 14 443	25 452	14 456	32 439	18 460	42 409	46 475	14 544	7 566
042 043	Standard deviation Combustor top deep temperature, °F	13 1312	11 1320	12 1273	6 1275	4 1294	48 1236	4 1282	22 1253	1 1269
043 044	Standard deviation Port 4 shallow tempera- ture, °F	15 899	15 890	15 922	8 951	7 973	27 850	9 1004	8 978	7 1036
044 045	Standard deviation Port 4 deep temperature °F	15 1338	11 1330	11 1356	13 1396	2 1401	91 1235	13 1326	29 1284	8 1325
045 046	Standard deviation Top cap deep temperature, F	16 797	13 835	13 834	11 863	5 890	60 538	7 807	21 797	7 (b)
046 047	Standard deviation Top cap surface tempera- ture, F	41 94	7 88	5 80	14 75	2 80	53 188	36 224	11 207	(b) 224
047 048	Standard deviation Top cap surface tempera- ture, °F	0 88	6 83	7 78	1 73	5 77	24 130	6 155	20 150	1 155
048 112	Standard deviation Port 6 insulation tempera- ture, °F	(b)	7 (b)	7 (b)	1 (b)	5 (b)	10 (b)	4 (b)	9 (b)	4 (b)
112 156	Standard deviation Gas exit wall temperature, F	(b) 356	(b) 340	(b) 338	(b) 351	(b) 348	(b) 340	(b) 361	(b) 331	(b) 356
156 171	Standard deviation Exit pipe wall tempera- ture, °F	6 (b)	6 (b)	4 (b)	7 (b)	3 (b)	25 (b)	8 (b)	48 (b)	1 (b)
	Standard deviation Port 6 deep temperature, F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
)43	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{
m b}{
m Data}$ or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test			
nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
026	Port 6 wall temperature,	(b)							
026 027	Standard deviation Port 4 wall temperature, °F	(b)	(b) (b)						
027 028	Standard deviation Port 1 wall temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b0	(b) (b)	(b)	(b) (b)	(b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 534	(b) 563	(b) 554	(b) 537	(b) 537	(b) 548	(b) 621	(b) 684
040 041	Standard deviation Combustor bottom deep temperature, °F	3 1088	9 1120	7 1082	5 1031	5 1097	6 1119	29 1190	25 1269
041 042	Standard deviation Combustor top shallow temperature, °F	10 573	50 614	14 646	14 635	10 624	12 646	13 691	23 687
042 043	Standard deviation Combustor top deep temperature, °F	4 1277	18 1315	3 1294	6 1230	6 1293	5 1301	15 1319	16 1453
043 044	Standard deviation Port 4 shallow tempera- ture, °F	10 1053	77 1054	15 1060	18 1025	11 1031	5 1077	7 1081	10 1148
044 045	Standard deviation Port 4 deep temperature	3 1336	10 1348	8 1327	12 1268	14 1323	10 1365	10 1324	5 1453
045 046	Standard deviation Top cap deep temperature, F	7 706	43 891	17 793	15 (b)	14 (b)	7 895	19 742	3 (b)
046 047	Standard deviation Top cap surface tempera- ture, °F	0 234	33 242	119 236	(b) 222	(b) 228	42 234	134 228	(b) 262
047 048	Standard deviation Top cap surface tempera- ture, F	6 163	5 170	4 158	4 146	3 146	3 152	6 167	2 184
048 112	Standard deviation Port 6 insulation tempera- ture, °F	7 (b)	5 (b)	5 (b)	5 (b)	(b)	5 (b)	(b)	1 (b)
112 156	Standard deviation Gas exit wall temperature, F	(b) 367	(b) 368	(b) 353	(b) 335	(b) 358	(ь) 370	(b) 328	(b) 406
156 171	Standard deviation Exit pipe wall tempera- ture, °F	8 (b)	42 (b)	7 (b)	3 (b)	3 (b)	(b)	(b)	2
171 043	Standard deviation Port 6 deep temperature, *F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	
043	Standard deviation	(b)							

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter				Test			
chan- nel		C1	C3"	C8	C11	C12	C16	C17
026	Port 6 wall temperature,	(b)						
026 027	Standard deviation Port 4-wall temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
027 028	Standard deviation Port 1 wall temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 632	(b) 653	(b) 658	(b) 641	(b) 659	(b) 672	(b) 680
040 041	Standard deviation Combustor bottom deep temperature, °F	13 1133	6 1185	3 1171	7 1154	9 1179	2 1197	10 1276
041 042	Standard deviation Combustor top shallow temperature, °F	12 674	10 696	14 708	6 689	9 729	7 766	44 781
042 043	Standard deviation Combustor top deep temperature, °F	11 1314	9 1308	1 1304	8 1341	18 1496	4 1513	11 1612
043 044	Standard deviation Port 4 shallow tempera- ture, °F	58 962	6 1038	13 1068	60 1029	36 1070	10 1090	52 1134
044 045	Standard deviation Port 4 deep temperature °F	27 1196	18 1280	2 1291	23 1275	2 1303	9 1337	24 1404
045 046	Standard deviation Top cap deep temperature, F	18 779	17 852	6 884	18 864	11 886	9 906	38 951
046 047	Standard deviation Top cap surface tempera- ture, °F	27 186	15 212	3 211	12 195	2 199	11 219	21 232
047 048	Standard deviation Top cap surface tempera- ture, °F	25 95	3 98	3 100	11 92	6 107	3 110	7 112
048 112	Standard deviation Port 6 insulation tempera- ture, °F	2 (b)	2 (b)	1 (b)	5 (b)	7 (b)	2 (b)	3 (b)
112 156	Standard deviation Gas exit wall temperature, F	(b) 276	(b) 345	(b) 342	(b) 335	(b) 321	(b) 367	(b) 395
156 171	Standard deviation Exit pipe wall tempera- ture, °F	103 (b)	4 (b)	(b)	14 (b)	13 (b)	5 (b)	11 (b)
171 043	Standard deviation Port 6 deep temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
043	r Standard deviation	(b)						

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter				Test			
nel		D6	D7	D1	D1	D10	D3	D4
026	Port 6 wall temperature,	(þ)	(b)	(b)	(b)	(b)	(b)	(b)
026 027	Standard deviation Port 4 wall temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 028	Standard deviation Port 1 wall temperature, °F	(b)	(b)	(b)	(b) (b0	(b)	(b)	(b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 543	(b) 632	(b) 628	(b) 602	(b) 559	(b) 632	(b) 626
040 041	Standard deviation Combustor bottom deep temperature, °F	49 1180	18 1220	49 1189	19 1003	13 866	45 1221	49 1028
041 042	Standard deviation Combustor top shallow temperature, °F	29 556	7 656	36 552	14 557	17 522	52 601	185 600
042 043	Standard deviation Combustor top deep temperature, °F	108 (b)	7 (b)	28 (b)	14 (b)	7 (b)	42 (b)	37 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 1050	(b) 1177	(b) 1034	(b) 1025	(b) 977	(b) 1183	(b) 1133
044 045	Standard deviation Port 4 deep temperature °F	135 1413	6 1444	46 1345	15 1260	12 1212	65 1567	83 1479
045 046	Standard deviation Top cap deep temperature,	60 625	4 923	34 851	6 865	8 812	39 920	113 932
046 047	Standard deviation Top cap surface tempera- ture, F	232 229	15 242	28 220	12 215	15 197	56 236	47 233
047 048	Standard deviation Top cap surface tempera- ture, F	23 239	2 259	8 236	6 237	3 219	11 260	17 253
048 112	Standard deviation Port 6 insulation tempera- ture, °F	28 (b)	(b)	9 (b)	4 (b)	3 (b)	12 (b)	18 (b)
112 156	Standard deviation Gas exit wall temperature,	(b) 398	(b) 404	(b) 31	(b) 354	(b) 321	(b) 423	(b) 388
156 171	Standard deviation Exit pipe wall tempera— ture, °F	11 (b)	(b)	7 (b)	3 (b)	3 (b)	7 (b)	36 (b)
171 043	Standard deviation Port 6 deep temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)
043	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter	Test							
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	ТВ1Н
026	Port 6 wall temperature,	(b)							
026 027	Standard deviation Port 4 wall temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
027 028	Standard deviation Port 1 wall temperature, °F	(b)	(b)	(b) (b)	(b) (b0	(b)	(b)	(b)	(b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 627	(b) 628	(b) 627	(b) 358	(b) 359	(b) 342	(b) 367	(b) 603
040 041	Standard deviation Combustor bottom deep temperature, °F	17 1148	12 1089	17 1152	30 1005	13 1005	18 979	12 1020	118 1159
041 042	Standard deviation Combustor top shallow temperature, °F	12 661	9 721	18 699	33 393	11 497	26 512	26 521	164 545
042 043	Standard deviation Combustor top deep temperature, °F	22 1474	3 1493	7 1302	72 1224	41 1289	16 1266	13 1265	103 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	27 1004	7 1076	7 1076	57 1099	16 1154	36 1187	19 1138	(b) 1044
044 045	Standard deviation Port 4 deep temperature °F	25 1277	9 1320	25 1313	91 1428	62 1462	49 1475	15 1431	245 1315
045 046	Standard deviation Top cap deep temperature, F	16 782	5 885	19 894	69 924	36 800	54 1020	15 984	270 831
046 047	Standard deviation Top cap surface tempera- ture, °F	27 172	14 206	13 207	117 315	35 366	69 376	20 340	211 250
047 048	Standard deviation Top cap surface tempera- ture, F	31 125	21 135	10 136	83 335	26 394	36 413	34 387	57 264
048 112	Standard deviation Port 6 insulation tempera- ture, °F	1 (b)	4 (b)	7 (b)	91 (b)	27 (b)	34 (b)	40 (b)	60 (b)
112 156	Standard deviation Gas exit wall temperature,	(b) 142	(b) 171	(b) 177	(b) 207	(b) 230	(b) 236	(b) 251	(b) 244
156 171	Standard deviation Exit pipe wall tempera- ture, °F	48 (b)	32 (b)	15 (b)	14 (b)	16 (b)	42 (b)	3 (b)	59 (b)
171 043	Standard deviation Port 6 deep temperature, *F	(b)							
043	Standard deviation	(b)							

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter				Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
026	Port 6 wall temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
026 027	Standard deviation Port 4 wall temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
027 028	Standard deviation Port 1 wall temperature, *F	(b) (b)	(b) (b)	(b)	(b) (b0	(b) (b)	(b) (b)	(b)
028 029	Standard deviation Combustor wall surface temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
029 040	Standard deviation Combustor bottom surface temperature, °F	(b) 659	(b) 686	(b) 646	(b) 678	(b) 703	(b) 432	(b) 420
040 041	Standard deviation Combustor bottom deep temperature, °F	157 1050	7 1277	31 1116	12 1329	23 1348	24 1288	8 1139
041 042	Standard deviation Combustor top shallow temperature, °F	216 680	27 728	172 727	8 628	24 714	39 617	58 693
042 043	Standard deviation Combustor top deep temperature, °F	19 1371	5 1418	3 1417	61 1312	21 1411	48 1858	32 1886
043 044	Standard deviation Port 4 shallow tempera- ture, °F	5 1290	6 1349	4 1341	47 1313	32 1321	39 1179	15 1253
044 045	Standard deviation Port 4 deep temperature °F	7 1642	1 1699	6 1683	50 1678	38 1652	79 1596	45 1636
045 046	Standard deviation Top cap deep temperature, F	13 1031	5 1065	10 1058	23 933	36 1002	52 775	28 966
046 047	Standard deviation Top cap surface tempera- ture, °F	4 296	5 264	7 269	95 99	16 102	90 360	39 360
047 048	Standard deviation Top cap surface tempera- ture, F	15 374	27 366	14 364	11 344	5 356	13 129	37 129
048 112	Standard deviation Port 6 insulation tempera- ture, °F	5 (b)	8 (b)	6 (b)	13 (b)	15 (b)	7 (b)	1 (b)
112 156	Standard deviation Gas exit wall temperature, F	(b) 281	(b) 276	(b) 327	(b) 263	(b) 266	(b) 271	(b) 279
156 171	Standard deviation Exit pipe wall tempera- ture, °F	4 (b)	3 (b)	16 (b)	4 (b)	6 (b)	9 (b)	4 (b)
171 043	Standard deviation Port 6 deep temperature, *F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
043	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter	Test							
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
026	Port 6 wall temperature,	201	205	209	202	197	176	168	167
026 027	Standard deviation Port 4 wall temperature, °F	5 210	5 214	4 210	2 226	3 210	7 194	2 202	9 208
027 028	Standard deviation Port 1 wall temperature, F	4 104	2 106	3 104	8 102	12 101	3 99	4 100	12 100
028 029	Standard deviation Combustor wall surface temperature, °F	1 1370	2 1293	1 1348	1 1391	3 1342	1 1246	1 1289	4 1244
029 040	Standard deviation Combustor bottom surface temperature, °F	11 410	9 345	41 380	16 402	7 392	33 370	9 390	38 378
040 041	Standard deviation Combustor bottom deep temperature, °F	3 1233	12 1012	26 1130	7 1283	4 1227	15 1089	9 1202	19 1209
041 042	Standard deviation Combustor top shallow temperature, °F	5 936	29 911	172 913	16 953	12 934	26 900	8 877	23 808
042 043	Standard deviation Combustor top deep temperature, °F	(b)	12 (b)	22 (b)	4 (b)	7 (b)	21 (b)	11 (b)	61 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 272	(b) 272	(b) 270	(b) 288	(b) 268	(b) 249	(b) 258	(b) 259
044 045	Standard deviation Port 4 deep temperature °F	4 242	2 243	1 241	9 267	11 245	4 222	5 231	17 234
045 046	Standard deviation Top cap deep temperature, F	4 (b)	(b)	2 (b)	10 (b)	13 (b)	4 (b)	5 (b)	15 (b)
046 047	Standard deviation Top cap surface tempera- ture, °F	(b) 337	(b) 373	(b) 356	(b) 380	(b) 350	(b) 297	(b) 316	(b) 335
047 048	Standard deviation Top cap surface tempera- ture, F	4 185	4 190	5 192	5 180	7 175	15 156	2 149	9 153
048 112	Standard deviation Port 6 insulation tempera- ture, °F	5 292	5 292	4 292	3 293	3 293	6 293	1 293	3 291
112 156	Standard deviation Gas exit wall temperature,	0 480	0 548	0 496	0 533	0 501	0 423	0 461	0 481
156 171	Standard deviation Exit pipe wall tempera- ture, °F	9 465	4 479	8 434	6 425	6 411	14 368	3 496	14 518
171 043	Standard deviation Port 6 deep temperature, *F	13 188	5 192	40 196	38 180	4 172	3 155	3 148	17 155
043	Standard deviation	6	6	, 4	4	4	7	0	4

 ${}^{\rm b}{\rm Data}$ or results were not obtained.

TABLE 4. - Continued. (d) Continued. - Combustor wall temperature data

Data	Parameter	Test							
chan- nel		E19	E13A	E13B	E14	E11	E12	E15	
026	Port 6 wall temperature,	167	196	211	212	196	183	185	
026	Standard deviation Port 4 wall temperature, °F	13	5	4	1	4	3	2	
027		207	215	238	242	212	203	205	
027	Standard deviation Port 1 wall temperature, °F	10	4	6	1	9	2	2	
028		104	113	116	119	115	109	107	
028 029	Standard deviation Combustor wall surface temperature, °F	4 1246	1 1378	1 1422	1 1448	2 1336	1 1311	1 1313	
029 040	Standard deviation Combustor bottom surface temperature, °F	61 359	27 408	2 420	3 428	16 392	10 376	14 385	
040 041	Standard deviation Combustor bottom deep temperature, °F	45 1256	4 1329	1 1322	1 1302	9 1159	4 1128	1 1177	
041 042	Standard deviation Combustor top shallow temperature, °F	20 760	16 904	15 953	12 989	19 957	17 918	12 906	
042 043	Standard deviation Combustor top deep temperature, °F	81 (b)	13 (b)	11 (b)	6 (b)	20 (b)	7 (b)	0 (b)	
043	Standard deviation Port 4 shallow tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
044		262	281	308	311	273	259	262	
044	Standard deviation Port 4 deep temperature	18	5	6	1	11	2	2	
045		233	247	275	279	244	233	236	
045	Standard deviation Top cap deep temperature,	13	4	8	1	10	1	2	
046		(b)	(b)	(b)	(b)	(b)	(b)	234	
046	Standard deviation Top cap surface tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	0	
047		296	357	372	351	321	289	311	
047	Standard deviation Top cap surface tempera- ture, °F	39	10	3	3	4	4	5	
048		158	177	190	192	175	163	165	
048	Standard deviation Port 6 insulation tempera- ture, °F	5	4	3	1	4	3	2	
112		289	288	289	289	289	289	290	
112	Standard deviation Gas exit wall temperature, F	1	0	0	1	0	1	0	
156		474	567	582	530	498	446	496	
156	Standard deviation Exit pipe wall tempera- ture, °F	62	14	2	5	4	3	14	
171		484	446	456	449	439	381	408	
171	Standard deviation Port 6 deep temperature, F	56	4	8	3	10	5	5	
043		158	178	192	193	176	164	166	
043	Standard deviation	6	4	3	1	4	3	1	

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test				
nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
026	Port 6 wall temperature,	195	212	202	210	215	213	186	202	205
026 027	Standard deviation Port 4 wall temperature, °F	7 239	1 257	1 242	3 251	0 260	1 252	2 241	2 243	3 247
027 028	Standard deviation Port 1 wall temperature, F	9 110	2 115	6 114	9 115	2 116	7 113	3 107	5 109	1 106
028 029	Standard deviation Combustor wall surface temperature, °F	2 1373	1 1365	1 1348	1 1411	0 1462	3 1473	1 1291	2 1317	1 1320
029 040	Standard deviation Combustor bottom surface temperature, °F	39 355	6 359	17 324	13 372	14 369	8 323	13 233	7 222	4 276
040 041	Standard deviation Combustor bottom deep temperature, °F	8 1075	2 1086	4 503	18 1237	11 1141	5 1049	27 335	27 425	3 625
041 042	Standard deviation Combustor top shallow temperature, °F	31 920	9 940	20 906	47 945	58 976	19 991	84 774	48 857	132 835
042 043	Standard deviation Combustor top deep temperature, °F	16 (b)	8 (b)	8 (b)	10 (b)	8 (b)	2 (b)	20 (b)	3 (b)	11 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 301	(b) 318	(b) 301	(b) 317	(b) 330	(b) 326	(b) 307	(b) 312	(b) 314
044 045	Standard deviation Port 4 deep temperature °F	10 274	3 293	5 276	11 289	2 301	3 296	6 276	7 281	2 291
045 046	Standard deviation Top cap deep temperature, F	10 676	2 742	5 746	11 771	2 816	3 828	6 637	6 753	2 742
046 047	Standard deviation Top cap surface tempera- ture, °F	45 280	17 299	3 258	19 290	9 301	9 281	30 252	2 257	8 267
047 048	Standard deviation Top cap surface tempera- ture, F	5 176	5 195	4 185	9 191	1 194	5 192	3 173	3 182	0 187
048 112	Standard deviation Port 6 insulation tempera- ture, °F	8 286	2 293	1 293	2 291	1 290	1 287	2 (b)	2 (b)	3 (b)
112 156	Standard deviation Gas exit wall temperature, F	2 426	1 452	1 392	0 453	1 463	0 422	(b) 384	(b) 397	(b) 418
156 171	Standard deviation Exit pipe wall tempera- ture, °F	9 (a)	3 (a)	9 (a)	5 (a)	3 (a)	6 (a)	5 (a)	3 (a)	1 (a)
171 043	Standard deviation Port 6 deep temperature, F	(b) 176	(b) 196	(b) 184	(b) 191	(b) 194	(b) 192	(b) 174	(b) 182	(b) 185
043	Standard deviation	8	2	1	2	0	1	1	3	4

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test			
nel		F19	F16	F27	G2	G3	G6	G1	G5
026	Port 6 wall temperature,	214	220	223	194	194	185	159	203
026 027	Standard deviation Port 4 wall temperature, °F	1 257	1 260	1 265	2 238	2 225	2 224	5 197	11 242
027 028	Standard deviation Port 1 wall temperature, °F	1 110	1 112	2 116	4 119	6 114	7 116	5 108	17 122
028 029	Standard deviation Combustor wall surface temperature, °F	0 1371	2 1392	1 1445	4 1419	1 1333	5 1361	4 1334	4 1510
029 040	Standard deviation Combustor bottom surface temperature, °F	8 192	9 180	3 202	15 281	12 374	8 409	42 420	25 456
040 041	Standard deviation Combustor bottom deep temperature, °F	27 166	17 206	8 233	20 468	5 1060	10 1110	26 982	3 1261
041 042	Standard deviation Combustor top shallow temperature, °F	16 878	8 886	26 917	330 952	35 889	21 894	14 798	16 975
042 043	Standard deviation Combustor top deep temperature, °F	5 (b)	4 (b)	6 (b)	7 (b)	15 (b)	11 (b)	62 (b)	27 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 328	(b) 332	(b) 341	(b) 312	(b) 295	(b) 294	(b) 758	(b) 958
044 045	Standard deviation Port 4 deep temperature °F	2 297	1 301	2 311	5 277	3 262	8 259	12 774	43 972
045 046	Standard deviation Top cap deep temperature, F	2 780	1 806	3 846	5 728	5 739	7 740	11 581	41 781
046 047	Standard deviation Top cap surface tempera- ture, °F	10 287	6 294	6 311	8 330	4 338	5 328	25 251	35 328
047 048	Standard deviation Top cap surface tempera- ture, °F	3 195	3 199	1 203	22 188	5 187	5 176	7 740	13 958
048 112	Standard deviation Port 6 insulation tempera- ture, °F	1 (b)	2 (b)	1 (b)	3 292	2 290	2 287	32 287	57 291
112 156	Standard deviation Gas exit wall temperature, F	(b) 457	(b) 464	(b) 480	1 334	0 375	0 343	0 254	3 373
156 171	Standard deviation Exit pipe wall tempera- ture, F	3 (a)	7 (a)	5 (a)	41 1063	2 1142	3 1096	7 882	12 1244
171 043	Standard deviation Port 6 deep temperature, F	(b) 195	(b) 200	(b) 202	31 187	10 187	11 174	19 1021	22 1308
043	Standard deviation	1	2	1	2	3	3	37	65

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter					Test				
chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
026	Port 6 wall temperature,	217	213	199	191	184	191	171	185	198
026 027	Standard deviation Port 4 wall temperature, °F	5 256	1 249	2 229	4 218	5 196	4 191	2 200	10 231	4 222
027 028	Standard deviation Port 1 wall temperature, F	6 126	4 125	4 117	6 116	3 108	4 107	2 111	9 113	7 117
028 029	Standard deviation Combustor wall surface temperature, °F	3 1479	0 1469	1 1322	1 1425	1 1389	1 1369	1 1327	1 1432	1 1334
029 040	Standard deviation Combustor bottom surface temperature, °F	12 447	16 467	9 430	19 452	19 440	15 421	16 400	24 418	25 424
040 041	Standard deviation Combustor bottom deep temperature, °F	4 1198	9 1240	1 1116	7 1225	3 1080	15 1120	14 977	4 1126	7 962
041 042	Standard deviation Combustor top shallow temperature, °F	11 996	25 983	19 884	12 899	35 904	23 890	52 860	13 911	26 906
042 043	Standard deviation Combustor top deep temperature, °F	8 (b)	2 (b)	2 (b)	15 (b)	7 (b)	10 (b)	4 (b)	23 (b)	22 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 951	(b) 908	(b) 820	(b) 868	(b) 859	(b) 831	(b) 761	(b) 898	(b) 818
044 045	Standard deviation Port 4 deep temperature	10 945	12 893	3 805	18 859	8 859	16 826	12 750	41 907	28 808
045 046	Standard deviation Top cap deep temperature, F	12 814	13 777	3 679	19 690	9 707	16 702	13 631	44 723	28 693
046 047	Standard deviation Top cap surface tempera- ture, °F	4 330	11 320	6 247	17 261	11 317	9 306	4 262	41 340	27 283
047 048	Standard deviation Top cap surface tempera- ture, F	12 1021	13 967	10 850	10 856	7 850	9 854	2 774	15 902	5 871
048 112	Standard deviation Port 6 insulation tempera- ture, °F	9 297	17 297	2 295	14 288	14 289	12 292	6 287	61 288	36 292
112 156	Standard deviation Gas exit wall temperature, F	0 373	0 332	0 276	1 280	1 342	0 330	0 278	0 408	1 297
156 171	Standard deviation Exit pipe wall tempera— ture, °F	13 1201	10 1044	7 1004	8 1033	5 1040	11 1015	2 882	15 1195	2 899
171 043	Standard deviation Port 6 deep temperature, F	10 1362	24 1306	26 1176	27 1198	14 1190	17 1192	9 1092	23 1249	17 1192
043	Standard deviation	10	17	3	17	12	13	5	68	41

^bData or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter					Test			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
026	Port 6 wall temperature,	191	183	200	185	206	205	202	219
026	Standard deviation Port 4 wall temperature,	1	7	2	3	9	1	4	4
027		210	218	222	212	226	229	234	237
027	Standard deviation Port 1 wall temperature, *F	6	6	12	4	3	9	8	4
028		113	109	117	117	119	118	119	127
028 029	Standard deviation Combustor wall surface temperature, °F	1 1307	2 1344	2 1392	0 1385	1 1404	1 1386	2 1435	2 1477
029 040	Standard deviation Combustor bottom surface temperature, °F	17 407	28 413	10 459	3 458	8 436	37 441	15 456	4 480
040 041	Standard deviation Combustor bottom deep temperature, °F	5 1025	22 1221	3 1092	3 1190	8 1203	5 1191	11 1252	4 1274
041 042	Standard deviation Combustor top shallow temperature, °F	34 857	23 833	28 916	12 932	20 933	54 933	19 935	28 977
042	Standard deviation Combustor top deep temperature, °F	4	29	9	2	3	6	14	8
043		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
043	Standard deviation Port 4 shallow tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
044		813	832	844	851	883	873	907	941
044	Standard deviation Port 4 deep temperature	8	30	20	7	11	24	15	4
045		808	830	837	846	882	868	908	946
045	Standard deviation Top cap deep temperature, F	9	29	22	7	11	26	15	4
046		670	675	701	710	764	754	758	793
046	Standard deviation Top cap surface tempera- ture, °F	6	25	10	1	10	23	9	4
047		310	311	297	314	343	327	341	351
047	Standard deviation Top cap surface tempera- ture, °F	5	16	4	1	6	13	3	2
048		831	827	867	872	915	923	938	983
048	Standard deviation Port 6 insulation tempera- ture, °F	9	26	12	1	18	17	18	8
112		293	289	292	296	296	292	291	298
112 156	Standard deviation Gas exit wall temperature, F	1 351	0 350	317	0 353	1 390	1 354	2 389	2 399
156	Standard deviation Exit pipe wall tempera- ture, °F	4	18	5	1	5	9	7	3
171		1013	1049	959	1042	1132	1040	1132	1145
171	Standard deviation Port 6 deep temperature, *F	14	21	12	6	14	29	21	9
043		1162	1163	1201	1211	1261	1262	1283	1332
043	Standard deviation	9	31	15	2	19	21	18	6

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter					Test				
chan- nel		Н1	Н2	НЗ	Н4	Н5А	H5 V	Н6	Н7	Н8
026	Port 6 wall temperature,	184	192	203	211	227	229	185	221	226
026 027	Standard deviation Port 4 wall temperature,	5 213	2 211	3 212	3 215	2 251	1 255	9 208	2 246	2 247
027 028	Standard deviation Port 1 wall temperature, F	2 118	1 118	1 120	2 123	5 136	1 138	8 121	1 137	3 145
028 029	Standard deviation Combustor wall surface temperature, °F	1 1343	1 1331	1 1322	1 1341	2 1478	1 1467	. 4 1365	1 1467	3 1503
029 040	Standard deviation Combustor bottom surface temperature, °F	10 325	4 407	9 430	5 443	13 462	9 497	40 437	10 494	9 510
040 041	Standard deviation Combustor bottom deep temperature, °F	37 750	3 1071	3 1199	3 1226	1 1343	6 1471	29 1438	1 1407	5 1435
041 042	Standard deviátion Combustor top shallow temperature, °F	71 803	22 804	18 816	12 831	7 894	4 887	10 697	3 891	20 933
042 043	Standard deviation Combustor top deep temperature, °F	(b)	0 (b)	(b)	5 (b)	12 (b)	9 (b)	56 (b)	17 (b)	8 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 700	(b) 712	(b) 741	(b) 761	(b) 852	(b) 846	(b) 723	(b) 837	(b) 837
044 045	Standard deviation Port 4 deep temperature °F	4 1377	4 1418	8 1479	3 1505	12 1683	9 1668	53 1567	3 1624	2 1619
045 046	Standard deviation Top cap deep temperature, F	10 716	6 763	17 806	7 836	15 939	9 1004	55 812	4 963	7 966
046 047	Standard deviation Top cap surface tempera- ture, °F	5 283	4 300	18 285	4 306	17 359	11 382	45 230	7 243	8 246
047 048	Standard deviation Top cap surface tempera- ture, °F	2 773	8 828	21 884	4 925	8 1013	21 1013	6 807	7 991	3 1010
048 112	Standard deviation Port 6 insulation tempera- ture, °F	11 396	7 421	15 449	7 470	15 510	9 514	56 406	11 503	2 515
112 156	Standard deviation Gas exit wall temperature, F	6 284	3 316	7 321	3 326	7 390	3 415	26 318	6 317	1 295
156 171	Standard deviation Exit pipe wall tempera- ture, °F	4 880	3 1009	12 1018	8 1018	6 1018	15 1018	8 1018	9 1018	5 1018
171 043	Standard deviation Port 6 deep temperature, °F	22 1316	5 1405	1497	1 1529	0 1691	1 1691	1 1572	1 1635	1 1630
043	Standard deviation	3	8	20	6	14	7	44	10	5

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test				
nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
026	Port 6 wall temperature,	219	216	211	201	193	156	194	205	209
026	Standard deviation Port 4 wall temperature, °F	2	2	6	7	9	10	7	3	5
027		215	208	216	195	202	191	216	231	208
027	Standard deviation Port 1 wall temperature,	6	4	4	8	5	10	8	2	6
028		143	141	148	161	171	147	161	169	169
028 029	Standard deviation Combustor wall surface temperature, °F	1 1502	1 1504	11 1521	2 1384	1 1467	9 1268	2 1329	3 1337	2 1432
029 040	Standard deviation Combustor bottom surface temperature, °F	9 504	6 490	6 496	18 474	12 487	27 417	15 462	7 460	17 481
040 041	Standard deviation Combustor bottom deep temperature, °F	3 1367	5 1357	7 1420	15 1108	13 1373	14 1248	10 1313	4 1308	12 1434
041 042	Standard deviation Combustor top shallow temperature, °F	12 941	13 947	8 950	12 909	18 897	20 709	20 801	17 818	14 844
042 043	Standard deviation Combustor top deep temperature, °F	3 (b)	(b)	3 (b)	24 (b)	14 (b)	32 (b)	14 (b)	2 (b)	16 (b)
043	Standard deviation Port 4 shallow tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
044		818	830	839	747	770	661	752	773	805
044	Standard deviation Port 4 deep temperature °F	5	4	2	37	27	37	12	4	14
045		1620	1657	1665	1451	1598	1388	1505	1522	1632
045	Standard deviation Top cap deep temperature, F	11	10	4	36	24	44	18	10	20
046		927	962	967	841	860	663	806	891	931
046	Standard deviation Top cap surface tempera- ture, °F	17	10	3	43	21	46	26	16	14
047		227	229	220	176	208	253	295	328	340
047	Standard deviation Top cap surface tempera- ture, °F	9	3	5	6	4	17	6	10	2
048		1003	1020	1035	943	924	697	874	934	982
048	Standard deviation Port 6 insulation tempera- ture, °F	3	7	3	45	26	60	27	8	18
112		508	512	514	478	459	351	440	470	490
112	Standard deviation Gas exit wall temperature, F	1	2	3	20	15	29	15	4	7
156		278	305	285	218	271	271	325	358	362
	Standard deviation Exit pipe wall tempera- ture, °F	12 1013	8 1018	2 1018	7 936	4 1018	24 1012	5 1018	8 1018	3 1018
171	Standard deviation Port 6 deep temperature, F	14	1	1	23	1	14	1	1	1
043		1631	6174	1679	1463	1602	1341	1513	1553	1647
043	Standard deviation	10	10	4	38	19	54	24	12	19

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter			Те	est		
nel		H19	H20	H23	H24	H25	H26
026	Port 6 wall temperature,	196	195	196	210	205	200
026 027	Standard deviation Port 4 wall temperature,	1 222	2 213	4 213	2 231	3 228	1 226
027 028	Standard deviation Port 1 wall temperature, F	5 165	5 157	6 151	5 148	2 140	· 1 133
028 029	Standard deviation Combustor wall surface temperature, °F	5 1458	1 1477	3 1491	2 1482	2 1472	2 1463
029 040	Standard deviation Combustor bottom surface temperature, °F	11 485	6 471	8 405	9 416	5 420	3 418
040 041	Standard deviation Combustor bottom deep temperature, °F	8 1341	3 1327	12 1012	4 1054	1 1135	1 1167
041 042	Standard deviation Combustor top shallow temperature, °F	15 882	14 886	91 899	70 889	9 876	28 872
042 043	Standard deviation Combustor top deep temperature, °F	(b)	3 (b)	2 (b)	4 (b)	(p)	2 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 827	(b) 833	(b) 848	(b) 855	(b) 848	(b) 844
044 045	Standard deviation Port 4 deep temperature °F	7 1631	4 1671	5 1699	2 1686	2 1677	3 1667
045 046	Standard deviation Top cap deep temperature, F	14 972	9 977	11 1011	11 1020	6 1011	3 1001
046 047	Standard deviation Top cap surface tempera- ture, F	7 340	6 337	6 340	2 337	3 328	4 315
047 048	Standard deviation Top cap surface tempera- ture, F	7 1015	1 1026	4 1056	9 1060	7 1052	9 1048
048 112	Standard deviation Port 6 insulation tempera- ture, °F	6 497	7 499	5 511	4 520	3 514	3 510
112 156	Standard deviation Gas exit wall temperature, F	3 364	2 370	3 376	1 326	3 327	1 334
156 171	Standard deviation Exit pipe wall tempera- ture, °F	4 1018+	2 1018+	5 1018+	30 1018+	12 1018+	8 1018
171 043	Standard deviation Port 6 deep temperature, F	1 1644	1 1688	1 1720	1 1705	1 1700	1 1688
043	Standard deviation	14	10	11	9	6	5

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test				
nel		I1	12	13	14	I5A	I5B	16	17	18
026	Port 6 wall temperature,	182	212	212	199	195	193	197	198	200
026 027	Standard deviation Port 4 wall temperature, °F	18 213	6 239	5 231	7 217	2 203	1 208	2 226	1 237	2 230
027 028	Standard deviation Port 1 wall temperature, °F	14 108	9 114	4 114	9 114	2 112	3 112	9 112	2 114	2 114
028 029	Standard deviation Combustor wall surface temperature, °F	4 1414	1 1463	1 1484	1 1366	1 1345	0 1336	3 1446	1 1480	0 1499
029 040	Standard deviation Combustor bottom surface temperature, °F	47 453	9 472	5 491	25 476	3 459	5 456	18 459	7 466	11 487
040 041	Standard deviation Combustor bottom deep temperature, °F	27 1443	5 1436	10 1488	15 1332	0 1334	1 1312	15 1435	3 1425	4 1460
041 042	Standard deviation Combustor top shallow temperature, °F	18 766	15 864	8 888	11 863	12 824	7 818	16 819	11 878	17 899
042 043	Standard deviation Combustor top deep temperature, °F	55 (b)	7 (b)	6 (b)	21 (b)	2 (b)	(b)	31 (b)	5 (b)	3 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 774	(b) 855	(b) 841	(b) 774	(b) 734	(b) 741	(b) 818	(b) 857	(b) 843
044 045	Standard deviation Port 4 deep temperature °F	62 1630	4 1675	5 1650	35 1488	2 1484	2 1488	28 1660	3 1683	2 1653
045 046	Standard deviation Top cap deep temperature, F	61 834	9 1022	8 995	35 889	6 845	4 857	16 927	7 1034	12 1022
046 047	Standard deviation Top cap surface tempera- ture, °F	88 271	25 303	11 204	ີ 41 168	3 171	3 179	34 217	14 246	2 229
047 048	Standard deviation Top cap surface tempera- ture, °F	35 849	39 1031	6 1040	7 969	912	2 916	13 972	1 1046	5 1042
048 112	Standard deviation Port 6 insulation tempera- ture, °F	98 419	16 508	8 515	37 484	1 456	1 457	37 477	9 506	2 509
112 156	Standard deviation Gas exit wall temperature, F	49 327	9 363	6 269	17 234	1 254	1 263	16 285	4 288	2 263
156 171	Standard deviation Exit pipe wall tempera- ture, °F	32 1018+	29 1018+	4 1018+	6 1018+	4 1018+	1 1018+	30 1018+	3 1018+	7 1018+
171 043	Standard deviation Port 6 deep temperature, F	1 1603	1 1694	1 1661	8 1508	1 1507	1511	1 1672	1 1707	1 1670
043	Standard deviation	66	13	8	30	6	3	17	9	11

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

			•				
Data chan-	Parameter			Te	est		
nel		19	I10A	I10B	111	112	113
026	Port 6 wall temperature,	198	197	201	197	175	169
026 027	Standard deviation Port 4 wall temperature, °F	3 219	4 210	2 201	6 205	6 192	14 192
027 028	Standard deviation Port 1 wall temperature, F	12 113	6 116	1 113	4 114	3 105	15 101
028 029	Standard deviation Combustor wall surface temperature, °F	1 1376	1 1336	1 1316	2 1327	2 1307	4 1395
029 040	Standard deviation Combustor bottom surface temperature, °F	36 467	9 455	5 455	10 454	36 405	43 425
040 041	Standard deviation Combustor bottom deep temperature, °F	15 1293	3 1293	2 1267	2 1278	15 1308	34 1412
041 042	Standard deviation Combustor top shallow temperature, °F	21 872	8 828	2 815	11 811	34 749	15 734
042 043	Standard deviation Combustor top deep temperature, °F	22 (b)	5 (b)	3 (b)	2 (b)	25 (b)	52 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 784	(b) 727	(b) 708	(b) 725	(b) 707	(b) 748
044 045	Standard deviation Port 4 deep temperature °F	38 1498	5 1432	4 1411	11 1468	37 1480	67 1609
045 046	Standard deviation Top cap deep temperature, F	44 952	17 864	3 817	15 816	45 799	51 810
046 047	Standard deviation Top cap surface tempera- ture, °F	37 213	22 200	6 193	3 194	25 204	73 201
047 048	Standard deviation Top cap surface tempera- ture, F	4 981	6 907	3 877	10 885	12 851	10 863
048 112	Standard deviation Port 6 insulation tempera- ture, °F	39 489	13 462	5 452	9 450	38 423	79 417
112 156	Standard deviation Gas exit wall temperature, F	12 246	7 232	3 227	4 238	19 265	39 261
156 171	Standard deviation Exit pipe wall tempera- ture, °F	2 1018+	10 990	980 980	5 1016	17 1018+	10 1005
171 043	Standard deviation Port 6 deep temperature,	1 1530	13 1459	16 1430	4 1484	1 1501	32 1615
043	Standard deviation	35	20	2	11	33	34

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter					ĩest				
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
026	Port 6 wall temperature,	170	175	210	198	201	204	197	201	192
026 027	Standard deviation Port 4 wall temperature, °F	5 189	3 196	2 220	7 199	4 236	2 237	3 227	5 201	3 206
027 028	Standard deviation Port 1 wall temperature, °F	3 121	2 128	1 134	5 134	4 133	2 132	3 130	3 135	5 139
028 029	Standard deviation Combustor wall surface temperature, °F	4 1338	2 1344	1 1419	1 1471	0 1485	1 1481	1 1492	4 1323	2 1368
029 040	Standard deviation Combustor bottom surface temperature, °F	16 381	3 407	12 397	8 428	8 457	8 480	9 501	15 407	6 416
040 041	Standard deviation Combustor bottom deep temperature, °F	10 739	10 1141	3 1224	6 1231	12 1352	2 1387	3 1448	6 1247	1 1237
041 042	Standard deviation Combustor top shallow temperature, °F	25 811	32 844	10 865	13 900	21 922	16 920	17 930	19 811	10 849
042 043	Standard deviation Combustor top deep temperature, °F	26 (b)	(b)	2 (b)	11 (b)	2 (b)	1 (b)	4 (b)	19 (b)	6 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 686	(b) 716	(b) 811	(b) 799	(b) 865	(b) 862	(b) 829	(b) 727	(b) 723
044 045	Standard deviation Port 4 deep temperature	17 1395	12 1457	4 1614	6 1600	3 1672	2 1672	8 1600	22 1465	2 1438
045 046	Standard deviation Top cap deep temperature, F	24 710	14 788	15 944	11 915	12 1014	12 1021	12 925	20 832	, 783
046 047	Standard deviation Top cap surface tempera- ture, °F	19 245	20 273	10 285	8 282	4 332	1 343	13 281	15 244	3 245
047 048	Standard deviation Top cap surface tempera- ture, °F	4 786	7 846	- 6 989	12 993	11 1051	3 1054	4 1017	883	3 871
048 112	Standard deviation Port 6 insulation tempera- ture, °F	26 392	19 413	12 485	7 487	5 502	2 505	15 492	17 445	3 438
112 156	Standard deviation Gas exit wall temperature, F	13 263	8 310	7 363	6 322	3 390	1 396	7 308	9 316	1 271
156 171	Standard deviation Exit pipe wall tempera- ture, °F	4 7 <u>1</u> 7	6 980	5 998	6 867	10 1011	2 1016	3 815	4 803	3 791
171 043	Standard deviation Port 6 deep temperature, F	154 1352	16 1447	9 1631	20 1601	6 1691	3 1697	16 1607	72 1480	11 1426
043	Standard deviation	25	16	14	12	16	16	13	13	7

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter					Test				
nel		K1	К3	K4	К2	K7	К8	K6	K5	К9
026	Port 6 wall temperature,	145	174	203	212	2 210	206	212	217	215
026 027	Standard deviation Port 4 wall temperature, °F	13 182		7 233						
027 028	Standard deviation Port 1 wall temperature, F	13 112	11 109	3 114						
028 029	Standard deviation Combustor wall surface temperature, °F	9 1220	4 1418	1 1405	1 1347				2 1419	2 1442
029 040	Standard deviation Combustor bottom surface temperature, °F	56 269	32 312	23 321	12 339		4 327	33 348	13 337	13 353
040 041	Standard deviation Combustor bottom deep temperature, °F	38 647	19 581	7 1040	3 815	2 802	3 1010	8 827	7 1232	1 742
041 042	Standard deviation Combustor top shallow temperature, °F	66 603	34 764	129 803	15 788	3 777	27 752	7 804	47 807	59 829
042 043	Standard deviation Combustor top deep temperature, °F	84 (b)	44 (b)	21 (b)	3 (b)	3 (b)	8 (b)	30 (b)	25 (b)	12 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 623	(b) 780	(b) 836	(b) 772	(b) 732	(b) 759	(b) 819	(b) 855	(b) 822
044 045	Standard deviation Port 4 deep temperature F	61 1356	23 1599	5 1649	23 1503	4 1463	12 1528	27 1649	5 1672	3 1607
045 046	Standard deviation Top cap deep temperature, F	61 575	31 747	13 891	26 854	5 802	9 827	39 868	8 949	11 908
046 047	Standard deviation Top cap surface tempera- ture, °F	75 241	48 346	24 400	23 332	8 309	12 334	19 330	18 393	6 356
047 048	Standard deviation Top cap surface tempera- ture, F	29 604	12 804	5 953	13 951	6 888	5 901	2 961	20 1031	1 1004
048 112	Standard deviation Port 6 insulation tempera- ture, °F	85 293	55 390	31 457	25 480	9 454	11 449	25 477	13 503	5 505
112 156	Standard deviation Gas exit wall temperature, F	41 294	28 311	19 404	9 311	4 308	4 350	9 333	10 413	3 335
156 171	Standard deviation Exit pipe wall tempera- ture, °F	27 106	12 1018+	14 1018+	9 1018+	1 1018+	9 1018+	5 1018+	12 1018+	1 1018+
171 043	Standard deviation Port 6 deep temperature, F	1 1235	2 1467	1 2633	1 3117	1 1434	2913	2 2543	1 1264	1 2267
043	Standard deviation	77	50	618	2	5	540	380	185	104

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter				Tes	t		
nel		K10	K12	K11	K14	K13	K15	K16
026	Port 6 wall temperature,	216	215	218	219	211	214	216
026 027	Standard deviation Port 4 wall temperature, °F	0 241		4 236			1 234	
027 028	Standard deviation Port 1 wall temperature, °F	1 130	9 127	9 121	4 118		9 128	
028 029	Standard deviation Combustor wall surface temperature, °F	0 1476	2 1358	3 1427	4 1450	4 1363	2 1458	3 1482
029 040	Standard deviation Combustor bottom surface temperature, °F	2 345	45 323	27 340	14 371	11 358	13 366	2 371
040 041	Standard deviation Combustor bottom deep temperature, °F	5 598	7 766	9 1300	7 930	· 2 808	1 831	4 955
041 042	Standard deviation Combustor top shallow temperature, °F	42 867	161 825	28 784	22 841	11 834	17 844	6 879
042 043	Standard deviation Combustor top deep temperature, °F	3 (b)	31 (b)	12 (b)	16 (b)	10 (b)	14 (b)	5 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 841	(b) 798	(b) 845	(b) 838	(b) 769	(b) 814	(b) 860
044 045	Standard deviation Port 4 deep temperature °F	1 1645	30 1547	33 1701	9 1630	13 1486	23 1637	6 1694
045 046	Standard deviation Top cap deep temperature, F	5 909	42 873	31 914	12 917	14 832	22 843	2 885
0 ⁶ 047	Standard deviation Top cap surface tempera- ture, °F	2 356	25 343	37 420	16 371	16 316	15 339	5 349
047 048	Standard deviation Top cap surface tempera- ture, °F	3 1011	7 975	19 1021	10 1040	6 948	2 955	1 1008
048 112	Standard deviation Port 6 insulation tempera- ture, °F	1 505	27 489	41 499	17 518	20 479	19 482	8 499
112 156	Standard deviation Gas exit wall temperature, F	1 342	11 351	20 430	9 343	9 298	7 337	3 346
156 171	Standard deviation Exit pipe wall tempera- ture, °F	2 1018+	5 1018+	11 990	10 1018+	2 1018+	2 1018+	1 1018+
171 043	Standard deviation Port 6 deep temperature, F	1 1789	2312	33 381	2 1777	1 2470	2 1691	1 940
043	Standard deviation	60	228	326	200	31	176	56

^bData or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

	· · ·		ocmper	acarc	uata	
Data chan-	Parameter.			Test	:	
nel		CASC	CAS1	CAS2	CAS	CAS4
026	Port 6 wall temperature, °F	179	175	200	195	195
026 027	Standard deviation Port 4 wall temperature, °F	37 215				
027 028	Standard deviation Port 1 wall temperature, °F	37 114				
028 029	Standard deviation Combustor wall surface temperature, °F	11 1312	13 1218			
029 040	Standard deviation Combustor bottom surface temperature, °F	157 252	190 294		195 493	
040 041	Standard deviation Combustor bottom deep temperature, °F	64 582	60 1180	73 1243	69 1168	89 1102
041 042	Standard deviation Combustor top shallow temperature, °F	379 673	242 575	79 863	109 859	160 860
042 043	Standard deviation Combustor top deep temperature, °F	148 (b)	141 (b)	96 (b)	171 (b)	166 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 762	(b) 709	(b) 797	(b) 736	(b) 777
044 045	Standard deviation Port 4 deep temperature °F	160 1566	194 1494	70 1589	142 1501	131 1583
045 046	Standard deviation Top cap deep temperature, F	201 763	287 710	91 852	254 835	163 808
046 047	Standard deviation Top cap surface tempera- ture, °F	206 323	234 305	119 351	142 319	167 317
047 048	Standard deviation Top cap surface tempera- ture, °F	75 839	85 797	44 936	66 912	61 889
048 112	Standard deviation Port 6 insulation tempera- ture, °F	241 394	278 390	136 462	168 432	201 422
112 156	Standard deviation Gas exit wall temperature, F	104 323	124 301	64 329	87 320	86 322
156 171	Standard deviation Exit pipe wall tempera- ture, °F	77 439	100 639	53 710	81 737	65 767
171 043	Standard deviation Port 6 deep temperature, *F	144 1231	239 1229	130 1368	226 1304	166 1286
043	Standard deviation	241	310	134	201	223

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

	•		· · · · ·		Jei acai	c dute			
Data chan-	Parameter					Test			
nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
026	Port 6 wall temperature, °F	175	198	180	201	200	142	186	170
026 027	Standard deviation Port 4 wall temperature, °F	' 44 217					35 175		
027 028	Standard deviation Port 1 wall temperature, °F	50 127			21 115	32 121	40 110		
028 029	Standard deviation Combustor wall surface temperature, °F	18 1189	14 1359		7 1406	10 1396	13 1096	9 1399	
029 040	Standard deviation Combustor bottom surface temperature, °F	331 377	228 399	269 335	105 383	200 350	316 268	129 375	251 246
040 041	Standard deviation Combustor bottom deep temperature, °F	126 1030	113 1038	128 1001	54 1099	95 885	92 684	45 1212	59 977
041 042	Standard deviation Combustor top shallow temperature, F	402 711	380 801	463 602	268 738	354 266	339 593	188 818	387 647
042 043	Standard deviation Combustor top deep temperature, °F	229 (b)	198 (b)	236 (b)	154 (b)	290 (b)	234 (b)	137 (b)	148 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 750	(b) 869	(b) ·797	(b) 932	(b) 911	(b) 581	(b) 783	(b) 695
044 045	Standard deviation Port 4 deep temperature °F	244 743	191 857	267 758	74 883	190 857	211 1281	96 1577	182 1444
045 046	Standard deviation Top cap deep temperature, F	238 574	185 718	250 611	73 738	169 781	352 485	124 804	307 690
046 047	Standard deviation Top cap surface tempera- ture, °F	210 273	182 283	244 202	61 201	231 281	223 166	178 297	218 278
047 048	Standard deviation Top cap surface tempera- ture, °F	70 688	77 851	74 728	41 908	92 877	68 551	58 883	105 775
048 112	Standard deviation Port 6 insulation tempera- ture, °F	270 348	228 420	306 365	92 438	231 428	264 268	187 430	254 380
112 156	Standard deviation Gas exit wall temperature, *F	123 284	106 205	138 148	45 180	106 203	113 123	87 240	112 246
156 171	Standard deviation Exit pipe wall tempera- ture, °F	83 850	70 398	63 340	42 529	61 495	56 201	92 522	106 490
171 043	Standard deviation Port 6 deep temperature, F	242 976	208 1169	250 1010	167 1244	206 1203	202 1103	297 1537	267 1181
043	Standard deviation	356	283	398	101	292	377	157	301

^bData or results were not obtained.

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

				•					
Data chan-	Parameter					Test			
nel		L1	L2	L3	L4	L5	L6	M1	M2
026	Port 6 wall temperature,	180	203	204	217	208	203	194	176
026 027	Standard deviation Port 4 wall temperature,	27 214	2 230	3 244	11 258	8 240	3 244	6 215	3 191
027 028	Standard deviation Port 1 wall temperature,	29 129	7 147	10 149	5 154	18 154	1 154	5 130	2 134
028 029	Standard deviation Combustor wall surface temperature, °F	14 1323	1 1382	1 1465	3 1501	4 1474	2 1517	4 1374	3 1412
029 040	Standard deviation Combustor bottom surface temperature, °F	44 409	7 396	22 409	13 476	55 471	8 469	30 491	20 483
040 041	Standard deviation Combustor bottom deep temperature, °F	40 1063	37 826	33 982	15 1215	28 1197	3 1097	15 1174	4 1033
041 042	Standard deviation Combustor top shallow temperature, °F	35 716	94 810	62 843	33 911	48 893	10 916	20 778	30 842
042 043	Standard deviation Combustor top deep temperature, °F	80 (b)	4 (b)	21 (b)	17 (b)	50 (b)	6 (b)	42 (b)	5 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 718	(b) 748	(b) 808	(b) 885	(b) 837	(b) 853	(b) 690	(b) 660
044 045	Standard deviation Port 4 deep temperature °F	70 1471	17 1464	31 1609	16 1712	69 1659	4 1652	13 1362	9 1311
045 046	Standard deviation Top cap deep temperature, F	55 702	18 791	24 853	16 959	74 948	19 944	22 723	24 745
046 047	Standard deviation Top cap surface tempera- ture, F	87 278	6 256	26 301	24 330	54 262	5 300	39 299	9 270
047 048	Standard deviation Top cap surface tempera- ture, °F	18 779	8 903	13 950	38 1049	18 1031	2 1050	11 774	6 799
048 112	Standard deviation Port 6 insulation tempera- ture, °F	115 377	16 446	31 451	30 476	66 485	6 498	41 402	14 403
112 156	Standard deviation Gas exit wall temperature, F	59 320	4 236	7 330	19 351	21 228	1 286	19 308	7 235
156 171	Standard deviation Exit pipe wall tempera- ture, °F	26 818	19 638	17 839	92 995	6 931	2 712	7 660	7 519
171 043	Standard deviation Port 6 deep temperature, *F	50 1208	51 1274	21 1354	(b) 1480	27 1471	8 1474	11 1157	19 1168
043	Standard deviation	103	21	28	29	67	11	43	19

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4, - Continued.

(d) Continued. - Combustor wall temperature data

Data	Parameter	Test								
chan- nel		М3	M4	M5	M6	M7	M8	M9	M11	M12
026	Port 6 wall temperature,	180	203	205	203	193	175	193	202	212
026	Standard deviation Port 4 wall temperature, °F	6	5	2	3	10	6	3	3	1
027		198	225	236	212	198	195	209	226	238
027	Standard deviation Port 1 wall temperature, *F	2	12	3	9	5	8	4	6	5
028		146	148	151	153	147	139	147	154	159
028 029	Standard deviation Combustor wall surface temperature, °F	3 1529	6 1551	3 1549	1 1572	6 1446	6 1406	1 1411	3 1547	0 1544
029 040	Standard deviation Combustor bottom surface temperature, °F	28 518	4 541	5 542	8 542	28 497	8 482	11 499	20 528	7 531
040 041	Standard deviation Combustor bottom deep temperature, °F	20 1205	1 1251	1 1247	1 1218	25 987	7 1105	3 1130	10 1189	3 1180
041 042	Standard deviation Combustor top shallow temperature, °F	15 885	19 929	13 933	12 943	49 904	1.3 865	13 868	11 924	5 952
042 043	Standard deviation Combustor top deep temperature, °F	25 (b)	3 (b)	2 (b)	5 (b)	26 (b)	2 (b)	4 (b)	23 (b)	(b)
043	Standard deviation Port 4 shallow tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
044		709	817	852	798	704	684	706	771	835
044	Standard deviation Port 4 deep temperature °F	32	32	2	23	36	8	6	23	15
045		1454	1643	1.665	1561	1378	1380	1403	1543	1653
045	Standard deviation Top cap deep temperature, F	45	31	6	20	48	8	13	25	11
046		787	916	973	924	819	778	792	839	914
046 047	Standard deviation Top cap surface tempera- ture, °F	30 299	37 325	5 371	25 333	38 288	2 288	5 305	20 316	20 284
047	Standard deviation Top cap surface tempera- ture, F	8	7	11	11	14	4	3	2	11
048		831	986	1054	1002	882	816	837	894	995
048	Standard deviation Port 6 insulation temperature, °F	37	48	6	33	46	5	6	24	33
112		414	480	507	491	444	407	426	451	487
112	Standard deviation Gas exit wall temperature, *F	16	19	3	12	23	4	5	10	12
156		280	346	380	301	256	292	314	312	302
156	Standard deviation Exit pipe wall tempera- ture, °F	10	15	7	17	12	10	3	4	13
171		639	883	890	673	562	733	776	777	923
171	Standard deviation Port 6 deep temperature, °F	31	15	10	8	10	20	17	17	61
043		1234	1426	1493	1418	1269	1225	1240	1313	1434
043	Standard deviation	44	50	5	31	52	4	7	25	31

TABLE 4. - Continued.

(d) Continued. - Combustor wall temperature data

Data chan-	Parameter			·	Ţ	est			
nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
026	Port 6 wall temperature,	170	200	196	216	211	178	198	192
026 027	Standard deviation Port 4 wall temperature, °F	29 200	3 216	11 216	7 233	8 225	15 193	3 203	3 185
027 028	Standard deviation Port 1 wall temperature,	29 112	10 131	21 123	8 135	6 140	14 116	5 132	14 125
028 029	Standard deviation Combustor wall surface temperature, °F	12 1425	2 1522	6 1409	1 1524	3 1535	8 1429	5 1507	3 1529
029 040	Standard deviation Combustor bottom surface temperature, °F	102 492	6 541	132 445	8 541	8 538	77 426	8 496	15 478
040 041	Standard deviation Combustor bottom deep temperature, °F	68 1296	3 1281	79 1182	4 1274	6 1180	73 1012	3 1061	10 967
041 042	Standard deviation Combustor top shallow temperature, °F	62 747	15 892	133 758	6 888	29 911	52 749	22 889	41 900
042 043	Standard deviation Combustor top deep temperature, °F	130 (b)	5 (b)	72 (b)	13 (b)	3 (b)	102 (b)	6 (b)	3 (b)
043 044	Standard deviation Port 4 shallow tempera- ture, °F	(b) 769	(b) 837	(b) 720	(b) 835	(b) 800	(b) 728	(b) 811	(b) 754
044 045	Standard deviation Port 4 deep temperature °F	113 1596	7 1642	102 1510	6 1632	19 1552	93 1542	4 1617	32 1494
045 046	Standard deviation Top cap deep temperature, F	109 760	8 935	141 802	7 910	25 895	89 789	9 907	47 867
046 047	Standard deviation Top cap surface tempera- ture, °F	166 309	3 291	63 276	8 287	19 321	82 336	5 359	27 318
047 048	Standard deviation Top cap surface tempera- ture, F	41 843	17 1044	46 865	13 1010	16 983	31 844	1001	14 946
048 112	Standard deviation Port 6 insulation tempera- ture, °F	196 404	2 502	82 436	15 501	27 490	107 417	7 487	36 468
112 156	Standard deviation Gas exit wall temperature, F	92 312	301	36 267	8 298	14 287	49 325	3 344	12 264
156 171	Standard deviation Exit pipe wall tempera- ture, °F	50 793	10 824	62 701	10 778	15 629	29 774	1 817	19 575
171 043	Standard deviation Port 6 deep temperature, F	95 1308	9 1474	176 1307	6 1448	13 1394	46 1291	4 1429	19 1344
043	Standard deviation	187	3	97	10	29	107	3	42

TABLE 4. - Continued.

(d) Concluded. - Combustor wall temperature data

				р				
Data chan-	Parameter				Test	;		
nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
026	Port 6 wall temperature,	194	189	.221	199	208	212	221
026	Standard deviation Port 4 wall temperature, °F	27	41	22	19	26	32	9
027		231	213	261	225	232	244	259
027	Standard deviation Port 1 wall temperature, F	26	38	22	21	28	36	14
028		141	119	151	143	136	154	131
028 029	Standard deviation Combustor wall surface temperature, °F	15 1513	14 1452	10 1523	14 1505	17 1483	25 1511	5 1548
029 040	Standard deviation Combustor bottom surface temperature, °F	115 524	176 493	56 498	69 507	120 508	115 521	10 519
040 041	Standard deviation Combustor bottom deep temperature, °F	68 1286	112 1236	38 1045	41 1109	66 1190	76 1194	4 1185
041 042	Standard deviation Combustor top shallow temperature, °F	64 872	177 799	31 931	49 891	100 844	81 891	16 938
042 043	Standard deviation Combustor top deep temperature, °F	148 (b)	184 (b)	92 (b)	93 (b)	123 (b)	146 (b)	5 (b)
043	Standard deviation Port 4 shallow temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
044		814	774	888	841	818	870	939
044	Standard deviation Port 4 deep temperature °F	106	163	69	65	106	125	8
045		1623	1586	1702	1646	1602	1672	1745
045	Standard deviation Top cap deep temperature, F	115	185	70	78	133	133	10
046		863	821	936	891	876	891	975
046	Standard deviation Top cap surface tempera- ture, °F	166	223	113	101	141	159	7
047		289	327	337	347	337	311	328
047	Standard deviation Top cap surface tempera- ture, °F	63	66	28	35	51	48	21
048		951	893	1034	995	968	994	1082
048	Standard deviation Port 6 insulation temperature, °F	193	258	132	115	163	187	8
112		460	437	445	445	468	446	424
112	Standard deviation Gas exit wall temperature,	88	121	47	49	76	78	27
156		272	305	324	329	300	304	291
156	Standard deviation Exit pipe wall tempera- ture, °F	60	64	31	37	52	57	19
171		702	695	802	831	690	827	876
171	Standard deviation Port 6 deep temperature,	122	150	93	109	150	128	51
043		1392	1321	1413	1405	1398	1408	1504
043	Standard deviation	187	280	118	106	163	183	12

TABLE 4. - Continued.

(e) PFB system solids discharge data

Data chan-	Parameter				J	Test				
nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
049	Solids discharge pipe temperature, °F	80	83	81	71	66	84	86	73	69
049 118	Standard deviation Solids discharge coolant temperature, °F	7 82	5 75	6 71	4 67		4 107	3 92	1 76	1 74
118 119	Standard deviation Solids discharge probe coolant temperature, °F	2 87	8 79	8 77	3 72		. 2 87	14 75	7 65	2 65
119 023 023 136 136 137	Standard deviation Solids discharge, 1b Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	1 50 (b) 14.7 0.7 0.2	8 31 (b) 15.1 0.9 0.4	8 23 (b) 14.7 0.5 0.1	1 (b) (b) 15.3 1.0 0.5	6 (b) (b) 14.5 0	1 3 (b) 15.5 0.9 0.6	10 2 (b) 15.8 1.2 0.8	0 (b) (b) 15.4 1.0 0.6	2 (b) (b) 16.2 1.3 1.1
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.5 71 39 3.7 (b) 165	0.6 101 40 6.6 (b) 221	0.3 88 26 5.2 (b) 240	0.7 108 47 (b) (b) 237	0 69 10 (b) (b) 200	0.6 118 37 5.5 (b) 202	0.8 142 42 (b) (b) 231	0.6 120 54 (b) (b) 191	0.8 138 39 (b) (b) 213
139 140	Standard deviation Hopper coolant tempera-	19 68	7 71	6 73	8 60	13 62	39 89	20 87	47 74	11 69
140 141	ture, °F Standard deviation Flyash collector tempera- ture, °F	1 98	2 169	5 198	2 196	3 119	2 147	2 167	1 120	2 143
141 150	Standard deviation Collector differential	28 (b)	23 (b)	10 (b)	13 (b)	24 (b)	30 (b)	33 (b)	40 (b)	26 (b)
150 165	pressure, psid Standard deviation Collector wall tempera- ture, °F	(b) 884	(b) 883	(b) 878	(b) 880	(b) 899	(b) 243	(b) 230	(b) 221	(b) 218
165 166	Standard deviation Collector gas tempera- ture, °F	15 1655	13 1643	12 1617	9 1625	13 1650	2 (b)	23 (b)	2 (b)	1 (b)
166 173	Standard deviation Collector wall tempera- ture, °F	22 (b)	17 (b)	22 (b)	15 (b)	23 (b)	(b)	(b)	(b)	(b)
173 174	Standard deviation Flyash hopper temperature, F	(b) (b)	(b) (b)	(p)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
174 175	Standard deviation Collector gas tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
176	Standard deviation Filter wall tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
176 180	Standard deviation Collector differential pressure, psid	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
180	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test							
chan- nel	•	A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
049	Solids discharge pipe temperature, °F	78	83	75	69	67	73	86	89
049 118	Standard deviation Solids discharge coolant temperature, °F	4 81	3 89	2 72	1 69	1 71	4 73	2 78	1 76
118 119	Standard deviation Solids discharge probe	8 77	11 84	2 69	2 66	1 66	1 67	9 77	2 72
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	9 (b) (b) 15.4 0.8 0.59	9 (b) (b) 15.1 0.8 0.38	1 (b) (b) 15.5 1.1 0.60	1 (b) (b) 15.7 1.1 0.78	1 (b) (b) 15.6 1.2 0.70	1 (b) (b) 16.0 1.2 0.95	9 (b) (b) 15.9 1.2 0.88	1 (b) (b) 16.9 1.1 1.47
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.55 123 25 (b) (b) 200	0.53 114 27 (b) (b) 229	0.71 119 30 (b) (b) 220	0.74 118 27 (b) (b) 198	0.75 123 37 (b) (b) 214	0.76 126 35 (b) (b) 219	0.76 132 28 (b) (b) 161	0.64 152 37 (b) (b) 250
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	18 77	40 86	18 78	16 72	17 68	14 72	22 87	10 90
140 141	Standard deviation Flyash collector tempera- ture, °F	5 148	2 159	2 187	2 170	1 172	4 160	2 138	2 195
141 150	Standard deviation Collector differential pressure, psid	22 (b)	37 (b)	16 (b)	14 (b)	21 (b)	25 (b)	- 15 (b)	17 (b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
165 166	Standard deviation Collector gas tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
166 173	Standard deviation Collector wall tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
173 174	Standard deviation Flyash hopper tempera- ture, °F	(b)							
174 175	Standard deviation Collector gas tempera- ture, °F	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
175 176	Standard deviation Filter wall tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
176 180	Standard deviation Collector differential pressure, psid	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
180	Standard deviation	(b)							

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

	·	-			_			
Data	Parameter			•	Test			
chan- nel		C1	С3	C8	C11	C12	C16	C17
049	Solids discharge pipe	59	60	56	51	66	74	76
049 118	temperature, °F Standard deviation Solids discharge coolant temperature, °F	1 80	1 74	3 73	3 78	3 82	1 97	1 96
118 119	Standard deviation Solids discharge probe coolant temperature, °F	5 78	1 67	1 68	3 69	8 72	5 83	2 83
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	6 (b) (b) 34.3 26.3 0.07	1 (b) 48.9 19.4 0.36	1 (b) 42.9 20.9 0.29	1 4.4 (b) 49.6 27.4 0.51	7.8 (b) 33.1 10.5 0.18	2 6.3 (b) 43.5 17.9 0.22	5.4 (b) 48.8 31.1 0.15
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.05 82 37 (b) (b) 120	0.31 121 46 2.9 (b) 184	0.34 108 53 3.2 (b) 186	0.40 128 66 5.4 (b) 185	0.08 106 18 3.4 (b) 154	0.14 116 32 5.1 (b) 191	0.09 112 28 1.9 (b) 217
139 140	ture, °F Standard deviation Hopper coolant tempera— ture, °F	52 62	27 60	15 58	34 52	13 63	26 72	26 73
140 141	Standard deviation Flyash collector tempera- ture, °F	1 95	1 136	2 142	2 133	4 129	2 160	1 172
141 150	Standard deviation Collector differential pressure, psid	42 (b)	41 (b)	37 (b)	34 (b)	18 (b)	41 (b)	62 (b)
150 165	Standard deviation Collector wall temperature, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
165 166	Standard deviation Collector gas tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
166 173	Standard deviation Collector wall tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
173 174	Standard deviation Flyash hopper tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
174 175	Standard deviation Collector gas tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)
175 176	Standard deviation Filter wall tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
176 180	Standard deviation Collector differential pressure, psid	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
180	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test								
chan- nel		D6	D7	D2	D1	D10	D3	D4		
049	Solids discharge pipe	69	67	75	71	63	70	78		
049 118	temperature, °F Standard deviation Solids discharge coolant temperature, °F	4 84	1 76	2 72	2 77	2 78	4 94	1 84		
118 119	Standard deviation Solids discharge probe	1 81	3 75	10 64	1 77	4 78	4 81	5 76		
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	0 (b) (b) 14.9 1.2 0.36	3 (b) (b) 14.9 1.9 0.63	17 (b) (b) (b) (b)	1 0.65 (b) 16.6 1.7 0.95	4 0.55 (b) 15.0 1.7 0.62	1 5.90 (b) 15.8 2.5 0.62	(b) (b) 14.5 0.1		
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper tempera— ture, °F	0.45 102 44 32.5 (b) 156	0.47 121 50 12.4 (b) 140	(b) 54 8 6.8 (b) 83	0.02 134 58 4.6 (b) 182	0.33 111 39 6.4 (b) 153	0.80 118 72 12.5 (b) 192	0 98 29 (b) (b) 151		
139 140	Standard deviation Hopper coolant tempera- ture, °F	20 77	19 73	21 65	15 75	11 67	12 72	15 83		
140 141	Standard deviation Flyash collector temperature, °F	3 146	1 119	2 107	2 144	3 111	6 121	1 110		
141 150	Standard deviation Collector differential pressure, psid	18 (b)	32 (b)	13 (b)	21 (b)	12 (b)	23 (b)	18 (b)		
150 165	Standard deviation Collector wall tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)		
165 166	Standard deviation Collector gas tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)		
166 173	Standard deviation Collector wall tempera—	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)		
173 174	ture, °F Standard deviation Flyash hopper tempera-	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)		
174 175	ture, °F Standard deviation Collector gas tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)		
175 176	ture, °F Standard deviation Filter wall tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)		
176 180	Standard deviation Collector differential	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)		
180	pressure, psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)		

bData or results were not obtained.

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test							
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	ТВ1Н
049	Solids discharge pipe temperature, °F	73	71	71	70	66	69	77	85
049 118	Standard deviation Solids discharge coolant temperature, °F	2 93	2 86	7 86	2 92	2 86	8 87	7 94	7 95
118 119	Standard deviation Solids discharge probe coolant temperature, °F	1 86	2 84	2 84	6 72	2 69	3 72	4 79	5 83
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	0 12.3 (b) 14.4 0.1 0.03	1 30.9 (b) 15.2 0.9 0.55	2 70.4 (b) 24.5 16.2 0.09	2 51.4 (b) 33.5 19.6 0.11	1 30.3 (b) 39.3 16.3 0.31	3 52.2 (b) 19.1 9.3 0.17	2 185 (b) 32.0 24.8 0.12	2 139 (b) 14.6 1.0 0.09
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0 71 2 1.8 (b) 131	0.55 114 36 17.5 (b) 176	0.08 74 20 40.3 (b) 171	0.06 80 30 10.0 (b) 140	0.20 118 34 0.4 (b) 85	0.11 74 22 11.6 (b) 133	0.07 88 36 56.7 (b) 189	0.31 86 25 54.5 (b) 180
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	41 77	35 73	22 74	22 71	6 65	32 68	25 78	42 84
140 141	Standard deviation Flyash collector tempera- ture, °F	1 87	2 140	6 130	4 98	3 65	7 94	6 115	6 126
141 150	Standard deviation Collector differential pressure, psid	12 (b)	35 (b)	25 (b)	16 (b)	4 (b)	22 (b)	33 (b)	42 (b)
150 165	Standard deviation Collector wall temperature, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)
165 166	Standard deviation Collector gas tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
166 173	Standard deviation Collector wall tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
173 174	Standard deviation Flyash hopper tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
174 175	ture, °F Standard deviation Collector gas tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
175 176	Standard deviation Filter wall tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) '
176 180	Standard deviation Collector differential	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
180	pressure, psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter				Test			
chan- nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
049	Solids discharge pipe temperature, °F	82	80	82	76	81	83	88
049 118	Standard deviation Solids discharge coolant temperature, °F	5 92	3 92	5 92	4 89	(b)	4 111	3 117
118 119	Standard deviation Solids discharge probe coolant temperature, °F	2 84	4 89	3 93	4 95	(b) (b)	3 90	3 99
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	1 82.2 (b) 13.9 1.6 0.01	2 96.5 (b) 14.9 1.2 0.22	4 28.3 (b) 15.0 1.0 0.18	4 35.4 (b) 16.3 4.2 0.92	(b) 32.3 (b) 13.8 1.5 1.49	5 8.4 (b) 14.5 0 0.01	2 19.4 (b) 14.5 0 (b)
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper temperature, °F	0 79 6 27.6 (b) 179	0.46 90 34 16.3 (b) 168	0.32 81 9 3.1 (b) 144	1.07 109 55 14.3 (b) 204	0 78 11 9.5 (b) 169	0.01 79 4 1.5 (b) 227	(b) 84 3 3.5 (b) 219
139 140	Standard deviation Hopper coolant tempera— ture, °F	27 84	23 81	10 86	20 78	13 81	5 86	23 92
140 141	Standard deviation Flyash collector tempera- ture, °F	5 110	3 111	5 106	4 135	3 111	3 135	2 140
141 150	Standard deviation Collector differential pressure, psid	18 (b)	21 (b)	18 (b)	19 (b)	13 (b)	6 (b)	18 (b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
165 166	Standard deviation Collector gas tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)
166 173	Standard deviation Collector wall tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
173 174	Standard deviation Flyash hopper tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
174 175	Standard deviation Collector gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
175 176	Standard deviation Filter wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b). (b)	(b)
176 180	Standard deviation Collector differential pressure, psid	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)
180	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test									
chan- nel		E1	E2	E3	E4	R5	E6	E9	E8		
049	Solids discharge pipe temperature, °F	54	62	61	58	51	46	48	54		
049 118	Standard deviation Solids discharge coolant temperature, °F	4 67	2 68	2 68	1 70	2 69	2 68	2 69	2 66		
118 119	Standard deviation Solids discharge probe coolant temperature, °F	1 (b)	(b)	(b)	4 (b)	1 (b)	0 (b)	1 (b)	0 (b)		
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 13.9 (b) 14.9 0.9 0.25	(b) 366 (b) 20.4 7.3 3.80	(b) 4.7 (b) 14.8 1.0 0.30	(b) 13.7 (b) 15.1 1.2 0.39	(b) 8.1 (b) 17.1 4.3 0.91	(b) 1.1 (b) 16.1 2.6 0.62	(b) 11.0 (b) 15.3 1.1 0.38	(b) 10.6 (b) 14.4 0.3 0.04		
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.29 94 21 7.6 (b) 194	0.73 144 90 14.1 (b) 190	0.34 126 29 5.3 (b) 162	0.39 108 20 20.6 (b) 135	1.29 123 58 4.8 (b) 125	0.82 118 37 5.9 (b) 119	0.34 102 25 2.8 (b) 136	0.08 48 2 5.4 (b) 183		
139 140	Standard deviation Hopper coolant tempera- ture, F	19 (b)	10 (b)	5 (b)	12 (b)	4 (b)	6 (b)	5 (b)	6 (b)		
140 141	Standard deviation Flyash collector tempera- ture, F	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339		
141 150	Standard deviation Collector differential pressure, tid	(b)	0 (b)	0 (b)	1 (b)	1 (b)	(b)	0 (b)	0 (b)		
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 446	(b) 460	(b) 429	(b) 422	(b) 407	(b) 364	(b) 469	(b) 492		
165 166	Standard deviation Collector gas tempera- ture, °F	10 341	4 360	34 348	32 348	3 324	1 287	4 330	16 354		
166 173	Standard deviation Collector wall tempera- ture, °F	6 93	2 88	10 81	12 69	3 64	8 74	2 79	10 85		
173 174	Standard deviation Flyash hopper tempera- ture, °F	1 118	3 137	2 104	3 101	2 82	4 85	4 87	4 98		
174 175	Standard deviation Collector gas tempera- ture, °F	2 1398	7 1405	8 1414	4 1475	4 1375	4 1193	4 1287	4 1309		
175 176	Standard deviation Filter wall tempera- ture, °F	12 66	5 78	29 78	24 73	11 67	39 66	12 60	37 72		
176 180	Standard deviation Collector differential pressure, psid	0.01	2 (b)	1 (b)	2 (b)	1 (b)	2 (b)	0.02	2 (b)		
180	Standard deviation	0	(b)	(b)	(b)	(b)	(b)	0	(b)		

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter				Test			
chan- nel		E19	E13A	E13B	E14	E11	E12	E15
049	Solids discharge pipe temperature, °F	66	65	67	62	53	50	51
049 118	Standard deviation Solids discharge coolant temperature, °F	3 64	2 64	4 67	1 64	2 64	1 63	0 65
118 119	Standard deviation Solids discharge probe coolant temperature, °F	1 (b)	1 (b)	6 (b)	1 (b)	1 (b)	1 (b)	(p)
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 4.9 (b) 21.4 7.9 2.3	(b) 7.3 (b) 32.3 8.8 3.4	(b) 9.1 (b) 33.5 8.5 4.5	(b) 1.2 (b) 30.5 13.5 3.3	(b) 3.6 (b) 35.1 9.9 3.5	(b) 6.5 (b) 37.6 10.8 3.5	(b) 1.5 (b) 16.1 3.3 1.9
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	1.6 124 52 5.9 (b) 164	0.7 102 22 3.8 (b) 149	1.0 205 26 0.5 (b) 151	1.5 121 35 1.4 (b) 141	0.8 133 38 0.8 (b) 132	0.8 124 34 1.4 (b) 133	0.9 69 3 1.0 (b) 123
139 140	ture, F Standard deviation Hopper coolant tempera- ture, F	26 (b)	3 (b)	2 (b)	4 (b)	7 (b)	6 (b)	4 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339	(b) 339
141 150	Standard deviation Collector differential pressure, psid	(b)	(b)	(p)	0 (b)	0 (b)	0 (b)	. (p)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 462	(b) 438	(b) 448	(b) 437	(b) 424	(b) 377	(b) 401
165 166	Standard deviation Collector gas tempera- ture, °F	49 1440	4 1625	5 1637	2 1559	7 1424	4 1355	4 1429
166 173	Standard deviation Collector wall tempera- ture, °F	35 72	31 69	11 70	12 69	14 62	13 61	28 64
173 174	Standard deviation Flyash hopper tempera- ture, F	2 69	1 65	0 66	1 65	1 60	1 59	1 62
174 175	Standard deviation Collector gas tempera- ture, F	2 1409	0 1603	1 1610	1 1528	1 1398	1 1325	1 1400
175 176	Standard deviation Filter wall tempera- ture, F	41 68	29 66	11 68	9 69	12 65	12 63	28 66
176 180	Standard deviation Collector differential	1 (b)	0 (b)	1 (b)	(b)	1 (b)	(b)	1 (b)
180	pressure, psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
049	Solids discharge pipe temperature, °F	55	70	68	65	60	56	68	56	64
049 118	Standard deviation Solids discharge coolant temperature, °F	4 68	3 69	2 69	1 67	2 68	1 68	2 67	2 68	1 69
118 119	Standard deviation Solids discharge probe coolant temperature, °F	(b)	(b)	0 (b)	1 (b)	(p)	(b)	(b)	(b)	(p) 0
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 1.0 (b) 16.8 1.8 1.4	(b) 2.0 (b) 16.3 2.5 1.7	(b) 1.7 (b) 15.8 1.1 0.8	(b) 1.6 (b) 17.3 2.7 1.7	(b) 1.3 (b) 15.7 1.8 1.3	(b) 0.5 (b) 14.3 0	(b) 0.4 (b) 14.3 0 (b)	(b) 0.6 (b) 16.3 1.5	(b) 0.8 (b) 17.5 0.9 1.2
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.1 195 47 8.2 (b) 231	0 161 61 26.4 (b) 239	0 159 50 5.2 (b) 237	0.5 165 75 12.3 (b) 244	0.2 156 43 5.7 (b) 223	0 109 14 2.0 (b) 182	(b) 74 2 8.4 (b) 149	0.1 134 54 8.1 (b) 171	0.3 184 58 10.8 (b) 178
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	23 (b)	34 (b)	38 (b)	26 (b)	31 (b)	8 (b)	4 (b)	27 (b)	30 (b)
140 141	Standard deviation Flyash collector tempera- ture, F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
141 150	Standard deviation Collector differential pressure, psid	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 78	(b) 89	(b) 88	(b) 89	(b) 89	(b) 82	(b) 90	(b) 84	(b) 93
165 166	Standard deviation Collector gas tempera- ture, °F	3 83	2 89	1 88	1 94	2 95	1 87	1 90	2 87	0 94
166 173	Standard deviation Collector wall tempera- ture, °F	1 66	2 79	1 80	3 78	2 74	2 69	1 80	2 68	0 73
173 174	Standard deviation Flyash hopper tempera-	3 63	3 76	1 78	0 77	2 73	1 68	2 80	3 70	1 71
174 175	ture, [*] F Standard deviation Collector gas tempera- ture, [*] F	3 65	3 80	0 78	0 77	2 73	1 69	2 78	3 68	1 75
175 176	Standard deviation Filter wall tempera-	4 68	3 82	1 83	0 82	2 79	1 74	2 82	2 73	1 73
176 180	ture, °F Standard deviation Collector differential	2 (b)	(b)	(b)	(p)	1 (b)	1 (b)	1 (b)	2 (b)	1 (b)
180	pressure, psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data chan-	Parameter				Т	est			
nel		F19	F16	F`27	G2 .	G3	G6	G1	G5
049	Solids discharge pipe temperature, °F	65	65	64	68	65	58	56	65
049 118	Standard deviation Solids discharge coolant temperature, °F	0 69	1 69	67,	67	69	1 67	0 68	5 71
118 119	Standard deviation Solids discharge probe coolant temperature, °F	(b)`	(p) 0	(b)	1 (b)	(b)	3 (b)	(p), 0	(b)
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 0.6 (b) 17.0 2.7 1.6	(b) 0.7 (b) 16.7 2.2 1.6	(b) 5.7 (b) 16.6 1.9 1.5	(b) 1.7 (b) 15.9 2.3 0.9	(b) 13.3 (b) 18.9 5.2 1.8	(b) 3.6 (b) 17.7 3.8 1.3	(b) 0.5 (b) 16.5 2.4 0.9	(b) 15.5 (b) 17.6 4.0 1.3
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper temperature, °F	0.6 176 68 8.6 (b) 199	0 180 52 6.8 (b) 209	0 177 56 6.2 (b) 198	0.9 128 66 7.3 (b) 135	2.0 178 99 6.3 (b) 159	1.5 178 70 4.2 (b) 140	0.9 109 61 7.7 (b) 108	1.6 159 92 8.0 (b) 184
139 140	Standard deviation Hopper coolant tempera- ture, °F	40 (b)	39 (b)	43 (b)	38 (b)	41 (b)	32 (b)	25 (b)	51 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
141 150	Standard deviation Collector differential pressure, psid	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 101	·(b) 101	(b) 101	(b) 272	(b) 301	(b) 285	(b) 253	(b) 401
165 166	Standard deviation Collector gas tempera- ture, °F	1 100	1 103	2 104	32 1419	3 1333	3 1271	5 745	8 1075
166 173	Standard deviation Collector wall tempera- ture, °F	1 76	1 76	1 76	34 85	23 87	18 79	25 79	29 86
173 174	Standard deviation Flyash hopper tempera- ture, F	1 75	1 76	76	2 94	1 99	1 93	3 88	3 101
174 175	Standard deviation Collector gas tempera- ture, °F	1 79	0 80	1 79	7 1372	3 1426	3 1412	4 1214	4 1586
175 176	Standard deviation Filter wall tempera- ture, °F	1 79	1 81	1 81	43 86	9 92	13 84	24 73	21 90
176 180	Standard deviation Collector differential pressure, psid	(b)	(b)	1 (b)	(b)	0 (b)	(b)	1 (b)	4 (b)
180	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
049	Solids discharge pipe temperature, °F	77	75	72	65	61	66	57	59	67
049	Standard deviation	1	. 1	1	1	2	2	0	1	1
118	Solids discharge coolant temperature, F	69	69	67	69	68	70	69	70	68
118 119	Standard deviation Solids discharge probe	2 (b)	0 (b)	(b)	(b)	1 (b)	(b)	(b)	1 (b)	0 (b)
119	coolant temperature, °F Standard deviation	(b)								
023	Solids discharge, 1b	14.5	0.5	3.5	4.5	10.3	11.í	ò.5	10.Ó	1.8
023	Standard deviation	(b)								
136	Gas sample pressure, psia	17.8	16.0	17.3	17.1	17.7	17.2	16.3	17.0	16.0
136 137	Standard deviation Gas sample venturi differ-	3.8 3.1	1.7 1.4	3.0 2.5	1.8 1.2	3.4 1.4	3.1 2.5	2.3 0.8	2.9 1.1	2.0 1.0
	ential pressure, psid									
137	Standard deviation	100	0 167	0 146	0.7 145	1.4 156	0.1 144	1.0 121	1.2 160	0.8 127
138 138	Gas sample temperature, °F Standard deviation	188 75	33	65	38	81	67	49	70	43
025	Flyash solids, 1b	7.0	4.2	49.5	1.5	3.3	1.4	3.2	15.1	1.6
025	Standard deviation	(b)								
139	Flyash hopper tempera- ture, °F	189	151	149	143	146	136	110	181	115
139	Standard deviation	46	30	14	23	31	25	18	35	18
140	Hopper coolant tempera- ture, °F	(b)								
140	Standard deviation	(b)								
141	Flyash collector tempera- ture, F	(b)								
141	Standard deviation	(b)								
150	Collector differential	(b)								
150	pressure, psid Standard deviation	(b)								
165	Collector wall tempera-	399	340	306	311	398	388	322	508	357
	ture, °F									
165	Standard deviation	10	6	5	6	6	8	3	20	5
166	Collector gas tempera- ture, °F	1069	982	886	949	1489	1467	1328	1659	1353
166	Standard deviation	7	22	11	15	38	26	19	24	26
173	Collector wall tempera- ture, °F	94	96	89	88	84	83	76	80	85
173	Standard deviation	2	1	1	2	1	1	0	6	1
174	Flyash hopper tempera- ture, °F	107	110	101	98	97	97	91	100	99
174	Standard deviation	2	4	2	3	4	4	3	10	3
175	Collector gas tempera- ture, °F	1528	1419	1315	1408	1376	1350	1206	1543	1232
175	Standard deviation	10	22	15	21	29	20	14	26	27
176	Filter wall tempera- ture, °F	101	99	88	82	88	92	80	90	89
176	Standard deviation	. 2	. 1	1	. 1	. 2	. 2	1	3	1
180	Collector differential	(b)								
180	pressure, psid Standard deviation	(b)								

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

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TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test							
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
049	Solids discharge pipe temperature, °F	69	62	67	76	75	67	66	79
049 118	Standard deviation Solids discharge coolant	1 71	1 68	2 68	0 69	2 70	2 69	4 72	2 70
118 119	temperature, °F Standard deviation Solids discharge probe	0 (b)	1 (b)	0 (b)	0 (b)	0 (b)	0 (b)	2 (b)	1 (b)
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differ-	(b) 16.1 (b) 17.3 3.7 3.2	(b) 11.6 (b) 18:2 3.8 1.5	(b) 0.7 (b) 16.2 2.0 1.0	(b) 2.4 (b) 18.1 0	(b) 14.6 (b) 17.0 2.7 2.1	(b) 7.3 (b) 17.5 3.4 1.5	(b) 18.1 (b) 16.9 2.4 0.8	(b) 10.4 (b) 17.1 2.1 0.8
137 138 138 025 025 139	ential pressure, psid Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper tempera-	0.1 149 63 3.0 (b) 140	1.5 185 72 2.3 (b) 139	0.7 143 39 3.1 (b) 128	0 199 15 0.4 (b) 135	0.1 172 58 6.4 (b) 189	1.3 174 54 3.3 (b) 147	0.9 128 33 7.1 (b) 164	0.8 140 28 4.2 (b) 157
139 140	ture, ^T F Standard deviation Hopper coolant tempera-	21 (b)	14 (b)	10 (b)	3 (b)	20 (b)	19 (b)	17 (b)	13 (b)
140 141	ture, F Standard deviation Flyash collector tempera-	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
141 150	ture, F Standard deviation Collector differential	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)
150 165	pressure, psid Standard deviation Collector wall tempera-	(b) 428	(b) 437	(b) 382	(b) 429	(b) 506	(b) 447	(b) 505	(b) 512
165 166	ture, °F Standard deviation Collector gas tempera-	8 1422	15 1503	9 1421	3 1462	6 1571	13 1475	3 1605	2 1630
166 173	ture, °F Standard deviation Collector wall tempera-	25 88	30 82	22 85	10 88	18 89	53 90	24 88	18 97
173 174	ture, °F Standard deviation Flyash hopper tempera-	1 103	2 96	1 98	1 101	2 102	3 103	2 102	3 109
174 175	ture, F Standard deviation Collector gas tempera-	3 1317	5 1364	3 1282	2 1335	3 1460	4 1369	3 1486	4 1504
175 176	ture, °F Standard deviation Filter wall tempera-	21 95	27 86	21 90	6 100	10 102	44 92	17 93	14 104
176 180	ture, F Standard deviation Collector differential	1 (b)	2 (b)	2 (b)	1 (b)	1 (b)	3 (b)	3 (b)	4 (b)
180	pressure, psid Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data chan-	Parameter					Test				
nel		Н1	Н2	Н3	Н4	H5A	H5B	Н6	Н7	Н8
049	Solids discharge pipe temperature, °F	83	80	78	76	88	92	78	80	87
049 118	Standard deviation Solids discharge coolant temperature, °F	2 71	0 71	1 74	1 76	2 76	1 77	1 74	1 72	2 75
118 119	Standard deviation Solids discharge probe coolant temperature, °F	1 (b)	0 (b)	1 (b)	1 (b)	1 (b)	0 (b)	1 (b)	1 (b)	1 (b)
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 1.0 (b) 18.2 2.6 3.0	(b) 6.0 (b) 16.8 1.4 1.7	(b) 9.0 (b) 14.6 0.5 0.6	(b) 12.9 (b) 14.7 0.8 0.6	(b) 6.4 (b) 14.6 0.9 1.3	(b) 5.1 (b) 14.2 0.1 (b)	(b) 9.6 (b) 15.7 2.0 2.0	(b) 7.1 (b) 15.0 1.5 1.7	(b) 4.4 (b) 14.7 0.6 0.5
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.4 199 103 4.3 (b) 234	0.2 235 58 4.5 (b) 189	0.1 148 40 10.6 (b) 168	0.5 140 35 11.1 (b) 152	(b) 109 35 4.9 (b) 152	(b) 101 2 2.3 (b) 162	0.5 134 72 3.3 (b) 192	0.2 164 55 2.9 (b) 179	0.1 152 32 4.6 (b) 168
139 140	Standard deviation Hopper coolant tempera- ture, F	10 (b)	33 (b)	32 (b)	23 (b)	15 (b)	5 (b)	29 (b)	15 (b)	26 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
141 150	Standard deviation Collector differential pressure, psid	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 231	(b) 240	(b) 238	(b) 249	(b) 285	(b) 302	(b) 230	(b) 232	(b) 229
165 166	Standard deviation Collector gas tempera- ture, °F	4 1369	1 1468	9 1543	3 1564	4 1741	4 1747	5 1696	3 1685	3 1662
166 173	Standard deviation Collector wall tempera- ture, °F	10 96	10 92	21 88	6 86	12 97	4 105	28 91	7 94	10 100
173 174	Standard deviation Flyash hopper tempera- ture, °F	2 109	1 106	1 102	1 98	3 108	0 115	1 98	106	2 110
174 175	Standard deviation Collector gas tempera- ture, °F	2 1161	3 1315	1 1389	1 1386	3 1539	1 1569	2 1508	2 1534	3 1475
175 176	Standard deviation Filter wall tempera- ture, °F	15 98	8 99	20 96	8 95	11 110	4 120	34 100	15 106	8 114
176 180	Standard deviation Collector differential pressure, psid	3 0.6	1.0	2.1	1 1.5	3 3.0	1 3.2	3.1	2 2.4	4 1.2
180	Standard deviation	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.1

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter				Т	est				
chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
049	Solids discharge pipe	75	72	69	67	70	60	75	83	70
049 118	temperature, F Standard deviation Solids discharge coolant	3 75	1 72	1 69	1 67	1 71	2 65	2 67	3 67	2 68
118 119	temperature, F Standard deviation Solids discharge probe	1 (b)	1 (b)	1 (b)	1 (b)	4 (b)	3 (b)	9 (b)	1 (b)	1 (b)
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differ-	(b) 12.9 (b) 16.3 2.4 2.4	(b) 11.2 (b) 15.8 2.1 0.7	(b) 11.5 (b) 14.5 0.4 0.2	(b) 5.9 (b) 14.4 0.2 0.1	(b) 2.2 (b) 16.0 2.0 2.1	(b) 8.3 (b) 14.9 1.7	(b) 2.2 (b) 13.6 0.6 0.4	(b) 3.9 (b) 13.4 0.5 0.3	(b) 25.3 (b) 13.7 0.8 0.7
137 138 138 025 025 139	ential pressure, psid Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.2 203 90 3.5 (b) 144	1.0 195 68 10.4 (b) 153	0.2 143 20 3.9 (b) 149	0.1 92 14 4.6 (b) 107	0.1 149 100 7.0 (b) 143	0.3 175 120 9.6 (b) 163	0.3 134 26 13.7 (b) 184	0.2 126 33 26.9 (b) 194	0.2 124 47 10.4 (b) 153
139 140	ture, °F Standard deviation Hopper coolant tempera-	11 (b)	15 (b)	23 (b)	9 (b)	25 (b)	39 (b)	7 (b)	65 (b)	35 (b)
140 141	ture, °F Standard deviation Flyash collector tempera-	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
141 150	ture, F Standard deviation Collector differential	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
150 165	pressure, psid Standard deviation Collector wall tempera-	(b) 219	(b) 227	(b) 218	(b) 178	(b) 209	(b) 208	(b) 233	(b) 254	(b) 260
165 166	ture, °F Standard deviation Collector gas tempera- ture, °F	6 1665	4 1718	2 1709	5 1458	3 1668	16 1439	3 1560	8 1596	1 1687
166 173	Standard deviation Collector wall tempera-	11 90	9 86	7 81	22 78	15 81	32 70	18 83	16 92	19 78
173 174	ture, °F Standard deviation Flyash hopper tempera-	2 103	2 99	1 94	1 89	1 93	3 83	2 95	1 108	4 91
174 175	ture, F Standard deviation Collector gas tempera-	2 1466	2 1551	2 1530	2 1288	2 1466	5 1286	3 1414	2 1463	4 1519
175 176	ture, °F Standard deviation Filter wall tempera-	18 109	15 107	7 101	23 91	18 100	57 72	16 90	13 103	14 102
176 180	ture, °F Standard deviation Collector differential	3 1.1	1 2.3	2 1.6	2 0.5	2 1.4	5 1.4	3 1.6	3 2.4	3 2.2
180	pressure, psid Standard deviation	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1

bData or results were not obtained.

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data chan-	Parameter				Test		
nel		H19	H20	H23	H24	H25	H26
049	Solids discharge pipe temperature, °F	64	62	68	66	56	52
049 118	Standard deviation Solids discharge coolant temperature, °F	1 70	1 71	1 71	3 71	3 70	2 70
118 119	Standard deviation Solids discharge probe coolant temperature, °F	0 174	2 174	0 175	1 175	0 175	0 176
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	0 4.3 (b) 14.8 1.7 1.7	0 4.3 (b) 15.1 1.9 1.9	0.9 (b) 15.1 2.3 2.3	9.6 (b) 16.0 3.3 3.0	0 3.9 (b) 14.9 1.8 1.9	0 5.3 (b) 13.2 0 (b)
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.2 177 90 7.2 (b) 167	0.2 195 74 18.7 (b) 156	0.2 183 99 28.9 (b) 125	0.9 220 79 18.1 (b) 153	0.2 206 68 13.2 (b) 154	(b) 119 31 8.6 (b) 138
139 140	Standard deviation Hopper coolant tempera- ture, F	33 (b)	36 (b)	26 (b)	31 (b)	24 (b)	5 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
141 150	Standard deviation Collector differential pressure, psid	(b) 1.4	(b) 1.7	(b) 1.8	(b) 1.9	(b) 1.9	(b) 1.9
150 165	Standard deviation Collector wall tempera- ture, °F	0 262	0.2 262	0.1 265	0.1 260	0.1 261	0.1 255
165 166	Standard deviation Collector gas tempera- ture, °F	5 1671	2 1717	3 1742	6 1726	4 1725	3 1711
166 173	Standard deviation Collector wall tempera- ture, °F	21 72	12 72	16 77	10 76	9 72	10 69
173 174	Standard deviation Flyash hopper tempera- ture, °F	2 88	1 90	1 95	1 92	2 92	1 90
174 175	Standard deviation Collector gas tempera- ture, °F	2 1520	3 1557	3 1567	1 1561	2 1558	3 1538
175 176	Standard deviation Filter wall tempera- ture, °F	15 93	12 88	9 91	9 91	10 80	7 73
176 180	Standard deviation Collector differential	4 1.5	1.8	2.1	3 2.1	3 2.2	2.2
180	pressure, psid Standard deviation	0.1	0.2	0	0	0.1	0.1

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		I1	12	Ι3	I4	I 5A	I5B	16	17	18
049	Solids discharge pipe temperature, °F	68	69	61	57	56	58	65	60	57
049 118	Standard deviation Solids discharge coolant temperature, °F	2 69	4 69	2 68	1 67	1 68	1 68	1 69	2 68	1 67
118 119	Standard deviation Solids discharge probe coolant temperature, °F	1 175	1 175	2 177	1 177	0 176	0 176	0 174	0 175	0 176
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	8.6 (b) 14.6 0	1 10.7 (b) 15.4 1.7 0.6	1 7.5 (b) 14.6 0 (b)	0 7.9 (b) 14.6 0 (b)	1 2.6 (b) 14.6 0 (b)	0 4.0 (b) 14.6 0.1 (b)	0 6.8 (b) 16.8 2.2 2.1	1 7.1 (b) 16.7 3.3 2.7	0 5.1 (b) 18.5 2.0 2.4
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper tempera-	0 61 3 11.8 (b) 144	1.2 103 56 14.6 (b) 148	(b) 66 4 6.2 (b) 139	(b) 56 2 2.3 (b) 132	(b) 53 0 0.4 (b) 138	(b) 55 2 5.0 (b) 147	0.6 149 96 2.2 (b) 187	1.6 161 88 2.6 (b) 197	0.3 197 65 0.2 (b) 204
139 140	ture, F Standard deviation Hopper coolant tempera- ture, F	11 (b)	13 (b)	2 (b)	3 (b)	3 (b)	24 (b)	59 (b)	40 (b)	29 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
141 150	Standard deviation Collector differential pressure, psid	(b) 0.07	(b) 0.09	(b) 0.05	(b) 0.05	(b) 0.05	(b) 0.07	(b) 80.0	(b) 0.09	(b) 80.0
150 165	Standard deviation Collector wall tempera- ture, °F	0 242	0 264	0 209	0.01 186	0 193	0 197	0.01 225	0 237	0.04 221
165 166	Standard deviation Collector gas tempera- ture, °F	19 1700	14 1737	3 1685	6 1512	2 1548	1 1545	8 1722	1 1748	2 1704
166 173	Standard deviation Collector wall tempera- ture, °F	41 80	19 85	10 75	16 71	9 69	7 69	17 76	14 77	15 76
173 174	Standard deviation Flyash hopper tempera- ture, F	5 94	4 106	2 89	1 88	1 81	1 84	2 102	1 107	3 99
174 175	Standard deviation Collector gas tempera-	8 1534	6 1594	2 1508	2 1342	0 1389	1 1400	3 1549	4 1593	2 1528
175 176	ture, °F Standard deviation Filter wall tempera- ture, °F	49 83	14 98	8 85	21 75	11 73	5 76	12 88	16 83	16 74
176 180	Standard deviation Collector differential pressure, psid	8 3.0	2 4.7	3 2.1	2 1.2	1 2.2	1 2.5	2 3.3	1 5.2	0 2,7
180	Standard deviation	0.1	0.2	0	0	0.1	0	0.2	0.2	0.1

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

	· · ·			_			
Data chan-	Parameter			Т	est		
nel		19	I 10A	I10B	111	112	113
049	Solids discharge pipe temperature, °F	57	64	67	66	53	58
049 118	Standard deviation Solids discharge coolant temperature, °F	2 67	2 67	0 66	4 68	1 68	2 68
118 119	Standard deviation Solids discharge probe coolant temperature, °F	0 176	1 175	0 173	1 174	1 177	1 176
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differ-	5.7 (b) 15.8 1.4 1.3	0 6.2 (b) 14.6 0 (b)	3 (b) 16.9 0.4 1.1	1 7.5 (b) 15.8 1.4 1.3	0 9.3 (b) 14.5 0 (b)	0 7.1 (b) 15.9 2.5 2.7
137 138 138 025 025 139	ential pressure, psid Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.4 163 47 0.7 (b) 169	(b) 107 24 0.2 (b) 128	0.2 199 5 0.1 (b) 160	0.1 159 60 4.4 (b) 157	(b) 57 4 3.5 (b) 173	0.7 104 87 6.0 (b) 119
139 140	ture, F Standard deviation Hopper coolant tempera- ture, F	34 (b)	24 (b)	7 (b)	33 (b)	21 (b)	9 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
141 150	Standard deviation Collector differential	(b) 0.05	(b) 0.09	(b) 0.07	(b) 0.06	(b) 0.13	(b) 0.07
150 165	pressure, psid Standard deviation Collector wall tempera— ture, °F	0.01 205	0.06 196	0.04 191	0.01 199	0.04 205	0.02 208
165 166	Standard deviation Collector gas tempera-	4 1546	6 1486	1 1460	3 1520	11 1572	10 1727
166 173	ture, °F Standard deviation Collector wall tempera- ture, °F	24 75	23 78	5 80	8 77	29 67	11 70
173 174	Standard deviation Flyash hopper tempera- ture, F	1 98	2 96	1 94	5 95	1 91	10 83
174 175	Standard deviation Collector gas tempera- ture, °F	3 1404	3 1332	2 1297	3 1354	6 1418	5 1491
175 176	Standard deviation Filter wall tempera- ture, °F	25 73	30 78	5 81	7 82	26 71	20 75
176 180	Standard deviation Collector differential	2.3	1.5	0 1.4	1.7	1 2.8	3 2.1
180	pressure, psid Standard deviation	0.2	0.4	0.1	0.1	0.2	0.2

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
049	Solids discharge pipe temperature, °F	55	54	65	47	59	61	53	68	66
049	Standard deviation Solids discharge coolant temperature, °F	1	1	1	6	2	1	1	2	3
118		67	68	67	68	58	57	57	68	67
118	Standard deviation Solids discharge probe coolant temperature, °F	0	1	0	0	1	0	0	1	4
119		(b)								
119	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b)								
023		2.0	0.4	1.0	1.2	0.5	0.6	1.0	1.0	1.3
023		(b)								
136		14.5	15.8	15.3	14.9	16.4	15.8	14.2	13.4	13.3
136		0.8	2.0	1.7	1.1	3.1	2.1	0.5	0	0
137		0.9	2.1	1.5	1.2	2.6	1.9	0.6	(b)	(b)
137	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.1	0.4	0.6	0	1.3	0.6	0	(b)	(b)
138		89	177	181	164	197	216	141	77	66
138		55	96	75	52	86	86	27	1	2
025		20.5	19.8	27.3	9.3	13.1	12.2	5.6	4.2	7.5
025		(b)								
139		145	192	252	171	259	262	147	203	142
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	17 (b)	50 (b)	37 (b)	20 (b)	32 (b)	40 (b)	33 (b)	12 (b)	8 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b)						
141	Standard deviation	(b)								
150	Collector differential	0.36	0.99	2.72	0.81	2.87	2.66	0.61	1.41	0.35
150 165	pressure, psid Standard deviation Collector wall tempera- ture, °F	0.15 210	0.05 233	0.06 253	0.06 239	0.17 277	0.16 281	0.03 235	0.02 229	0.04 205
165	Standard deviation Collector gas tempera- ture, °F	5	4	4	5	6	4	3	1	1
166		1375	1483	1662	1602	1716	1733	1599	1513	1427
166	Standard deviation Collector wall tempera- ture, °F	27	12	24	16	25	23	21	17	7
173		69	70	86	66	78	81	74	81	81
173	Standard deviation Flyash hopper tempera- ture, °F	1	1	2	6	3	1	1	3	3
174		82	83	130	81	97	94	84	90	86
174 175	Standard deviation Collector gas tempera- ture, °F	3 1191	1 1346	12 1532	7 1435	1 1579	1 1592	3 1422	4 1385	2 1094
175	Standard deviation Filter wall tempera-	30	13	17	12	19	21	10	15	61
176		78	84	92	82	98	104	88	83	81
176 180	ture, °F Standard deviation Collector differential	0.77	2 1.65	0 2.89	3 0.92	2 3.18	1 2.87	0.62	2 1.69	0 0.60
180	pressure, psid Standard deviation	0.12	0.18	0.08	0.07	0.29	0.28	0.05	0.31	0.07

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter				Т	est			
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	Т5
049	Solids discharge pipe	80	79	77	77	74	68	62	60
049 118	temperature, °F Standard deviation Solids discharge coolant temperature, °F	8 71	6 75	7 71	3 76	6 75	2 68	3 68	5 66
118 119	Standard deviation Solids discharge probe	2 (b)	(b)	2 (b)	3 (b)	4 (b)	3 (b)	1 (b)	0 (b)
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 394 (b) 15.4 1.9	(b) 173 (b) 15.1 2.1 1.1	(b) 95 (b) 14.4 0.1 (b)	(b) 124 (b) 15.5 2.1 0.9	(b) 309 (b) 14.4 0.1 0.2	(b) 7.1 (b) 14.1 0.1 (b)	(b) 11.7 (b) 14.3 0.4 0.3	(b) 14.9 (b) 16.0 2.1 0.8
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.7 159 72 26.4 (b) 154	0.5 128 59 815 (b) 130	(b) 73 5 28.9 (b) 136	1.2 149 48 44.8 (b) 157	0.1 71 5 114 (b) 180	(b) 67 3 46.5 (b) 87	0.3 81 37 77.6 (b) 145	1.0 134 78 42.9 (b) 127
139 140	ture, F Standard deviation Hopper coolant tempera- ture, F	42 (b)	38 (b)	55 (b)	28 (b)	50 (b)	25 (b)	58 (b)	47 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
141 150	Standard deviation Collector differential pressure, psid	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
150 165	Standard deviation Collector wall tempera- ture, °F	(b) 235	(b) 237	(b) 181	(b) 221	(b) 247	(b) 138	(b) 265	(b) 253
165 166	Standard deviation Collector gas tempera- ture, °F	60 959	80 1207	79 1051	47 1526	75 1433	65 718	82 1463	109 1232
166 173	Standard deviation Collector wall tempera- ture, °F	173 93	482 93	627 89	163 88	443 88	614 72	311 77	657 85
173 174	Standard deviation Flyash hopper tempera- ture, °F	9 100	7 99	8 94	5 96	6 96	3 76	5 89	7 94
174 175	Standard deviation Collector gas tempera-	10 1227	11 1182	13 943	5 1431	9 1335	3 586	11 373	10 219
175 176	ture, [*] F Standard deviation Filter wall tempera- ture, [*] F	328 95	528 123	630 119	201 139	469 135	540 72	190 89	95 91
176 180	Standard deviation Collector differential	11 1.0	30 1.3	34 0.9	16 1.5	²⁶ 1.3	3 0.4	12 0.9	11 1.4
180	pressure, psid Standard deviation	0.4	0.5	0.7	0.2	0.2	0.5	0.5	0.5

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		K1	К3	К4	K2	К7	К8	K6	K5	К9
049	Solids discharge pipe temperature, °F	60	58	63	66	69	71	69	72	73
049 118	Standard deviation Solids discharge coolant temperature, °F	1 67	1 66	3 67	2 66	0 67	<u>1</u> 68	1 68	2 68	1 67
118 119	Standard deviation Solids discharge probe	2 (b)	(b)	(b)	(b)	(b)	0 (b)	(b)	(b)	0 (b)
119 023 023 136 136 137	coolant temperature, °F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 0.6 (b) 17.8 1.7 1.8	(b) 0.4 (b) 16.1 0.5 0.9	(b) 5.4 (b) 19.5 5.1 2.4	(b) 1.3 (b) 15.8 0.5 0.7	(b) 0.9 (b) 15.5 0.3 0.5	(b) 2.3 (b) 20.6 1.8 3.0	(b) 2.2 (b) 16.9 1.0 1.3	(b) 4.5 (b) 24.2 3.3 4.7	(b) 9.9 (b) 17.5 0.3 1.7
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.9 242 72 5.6 (b) 168	0.2 185 40 4.4 (b) 199	2.4 268 104 27.6 (b) 231	0.2 214 42 18.9 (b) 185	0.2 232 20 8.9 (b) 215	0.9 354 29 10.4 (b) 234	0.5 237 26 84.2 (b) 170	1.6 365 69 62.9 (b) 231	0.2 303 9 8.3 (b) 182
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	31 (b)	14 (b)	33 (b)	23 (b)	26 (b)	4 (b)	12 (b)	23 (b)	3 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b) (b)	(b)							
141 150	Standard deviation Collector differential pressure, psid	(b)	(b) (b)	(b)						
150 165	Standard deviation Collector wall temperature, °F	(b) 219	(b) 241	(b) 291	(b) 242	(b) 232	(b) 251	(b) 249	(b) 284	(b) 250
165 166	Standard deviation Collector gas tempera- ture, °F	21 1364	8 1541	5 1662	7 1477	2 1442	3 1533	3 1618	8 1710	1 1601
166 173	Standard deviation Collector wall tempera- ture, °F	41 80	35 81	11 86	18 83	5 86	10 85	30 89	12 106	10 95
173 174	Standard deviation Flyash hopper tempera—	12 95	12 94	2 124	7 102	2 100	1 105	9 102	9 178	4 113
174 175	ture, °F Standard deviation Collector gas tempera- ture, °F	9 123	6 1318	10 1511	4 1296	1 1129	3 1392	5 1421	9 1569	4 1415
175 176	Standard deviation Filter wall tempera- ture, °F	2 77	45 80	11 99	24 97	78 93	13 101	31 100	10 110	23 106
176 180	Standard deviation Collector differential	5 1.0	1.1	5 3.3	2 0.7	1 0.8	3 1.9	0.9	5 3.6	0.7
180	pressure, psid Standard deviation	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter	Test							
chan- nel		K10	K12	K11	K14	K13	K15	K16	
049	Solids discharge pipe temperature, °F	73	72	73	70	72	72	75	
049 118	Standard deviation Solids discharge coolant temperature, °F	0 68	1 68	2 69	1 52	0 54	1 66	1 67	
118 119	Standard deviation Solids discharge probe coolant temperature, °F	(b)	0 (b)	1 (b)	5 (b)	7 (b)	1 (b)	1 (b)	
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 0.5 (b) 16.7 0.2 1.2	(b) 1.5 (b) 17.9 1.5 1.7	(b) 1.5 (b) 17.7 8.1 1.4	(b) 6.8 (b) 14.7 0	(b) 0.9 (b) 14.6 0	(b) 1.0 (b) 14.6 0	(b) 0.5 (b) 14.6 0	
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.1 279 10 1.6 (b) 199	0.9 325 73 21.9 (b) 216	3.9 220 116 69.5 (b) 202	0 92 9 14.9 (b) 128	0 78 0 15.1 (b) 117	0 77 1 1.0 (b) 120	0 78 0 0.4 (b) 103	
139 140	Standard deviation Hopper coolant tempera- ture, F	3 (b)	25 (b)	29 (b)	7 (b)	3 (b)	6 (b)	6 (b)	
140 141	Standard deviation Flyash collector tempera- ture, F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	
141 150	Standard deviation Collector differential pressure, psid	(b) 0.64	(b) 1.03	(b) 3.12	(b) 0.56	(b) 0.33	(b) 0.57	(b) 0.88	
150 165	Standard deviation Collector wall temperature, °F	0.04 255	0.11 252	0.37 296	0.03 253	0.03 228	0.02 252	0.05 257	
165 166	Standard deviation Collector gas tempera- ture, °F	1 1627	4 1541	10 1774	8 1624	1 1470	2 1611	0 1651	
166 173	Standard deviation Collector wall tempera- ture, °F	6 88	29 98	30 114	16 93	15 95	14 92	6 93	
173 174	Standard deviation Flyash hopper tempera- ture, F	1 105	12 112	12 253	8 116	8 106	1 106	1 102	
174 175	Standard deviation Collector gas tempera- ture, °F	2 1448	10 1397	29 1625	12 1432	3 1282	2 1418	1 1449	
175 176	Standard deviation Filter wall tempera- ture, °F	9 106	23 106	23 119	17 109	15 99	14 103	9 106	
176 180	Standard deviation Collector differential	1 0.8	0 1.4	4 4.3	4 0.7	1 0.4	0.7	0 1.0	
180	pressure, psid Standard deviation	0.2	0.1	0.2	0.1	0	0.1	0.1	

 $^{\rm b}{\rm Data}$ or results were not obtained.

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter			Test		
chan- nel		CAS0	CAS1	CAS2	CAS3	CAS4
049	Solids discharge pipe temperature, °F	60	65	65	58	68
049	Standard deviation Solids discharge coolant temperature, °F	5	3	2	6	4
118		59	63	56	60	63
118	Standard deviation	2	0	3	2	7
119	Solids discharge probe	(b)	(b)	(b)	(b)	(b)
119 023 023 136 136 137	coolant temperature, F Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 45.2 (b) 16.7 2.2 1.2	(b) 3.9 (b) 15.9 3.1 2.3	(b) 22.0 (b) 16.2 2.6	(b) 350 (b) 16.3 1.8 0.9	(b) 2320 (b) 17.1 2.8 2.3
137	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, lb Standard deviation Flyash hopper temperature, °F	1.1	0.8	1.2	0.8	0.6
138		175	122	146	166	214
138		84	77	65	74	93
025		51.4	137	40.8	292	270
025		(b)	(b)	(b)	(b)	(b)
139		127	119	128	165	170
139	Standard deviation Hopper coolant tempera- ture, °F	37	39	34	65	53
140		(b)	(b)	(b)	(b)	(b)
140 141	Standard deviation Flyash collector temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)
150	Collector differential	(b)	1.3	1.4	4.5	4.1
150	pressure, psid Standard deviation Collector wall tempera- ture, °F	(b)	0.1	0.3	1.8	1.5
165		296	243	326	318	327
165	Standard deviation	95	54	52	79	61
166	Collector gas tempera-	1442	1475	1570	1493	1547
166 173	ture, °F Standard deviation Collector wall tempera- ture, °F	476 91	400 86	235 91	352 83	236 87
173	Standard deviation Flyash hopper tempera- ture, °F	5	10	5	6	20
174		99	94	98	90	98
174 175	Standard deviation Collector gas tempera- ture, °F	9 1321	10 231	5 324	8 1114	11 1476
175	Standard deviation Filter wall tempera- ture, °F	366	76	54	626	221
176		94	104	103	98	106
176	Standard deviation	9	17	9	16	20
180	Collector differential	1.62	1.27	1.69	6.45	4.85
180	pressure, psid Standard deviation	0.51	0.46	0.31	2.31	2.04

 $^{^{\}mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data	Parameter				Te	st			
chan- nel		L1	L2	L3	L4	L5	L6	M1	M2
049	Solids discharge pipe temperature, °F	75	79	81	80	74	68	79	59
049 118	Standard deviation Solids discharge coolant temperature, °F	12 67	4 65	3 67	5 69	6 67	2 66	3 66	2 66
118 119	Standard deviation Solids discharge probe coolant temperature, °F	(b)	1 (b)	(b)	1 (b)	1 (b)	0 (b)	(b)	(b)
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b) 18.4 (b) 19.7 3.8 3.2	(b) 48.1 (b) 15.1 0.6 0.4	(b) 26.9 (b) 15.7 1.4 0.7	(b) 42.1 (b) 20.5 6.2 5.3	(b) 32.7 (b) 22.9 6.0 5.6	(b) 2.9 (b) 18.3 2.5 1.9	(b) 16.0 (b) 16.5 1.1	(b) 10.6 (b) 15.0 0.7 0.4
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	1.4 217 117 38.3 (b) 190	0.2 168 27 45.2 (b) 141	0.6 161 38 16.2 (b) 191	0.3 236 143 52.6 (b) 207	0.7 330 85 72.2 (b) 228	1.2 238 39 2.8 (b) 178	0.6 204 41 20.4 (b) 180	0.4 109 20 11.2 (b) 106
139 140	ture, F Standard deviation Hopper coolant tempera- ture, F	46 (b)	21 (b)	49 (b)	50 (b)	43 (b)	8 (b)	12 (b)	16 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
141 150	Standard deviation Collector differential pressure, psid	(b) 7.6	(b) 1.9	(b) 4.2	(b) 5.6	(b) 5.7	(b) 2.6	(b) 1.7	(b) 0.9
150 165	Standard deviation Collector wall temperature, °F	1.1 321	0.1 258	0.4 339	2.0 361	2.1 266	0 304	0 308	0.2 256
165 166	Standard deviation Collector gas tempera- ture, °F	28 1513	18 1428	15 1577	57 1745	25 1716	2 1626	8 1393	7 1318
166 173	Standard deviation Collector wall tempera- ture, °F	41 90	13 98	13 93	19 88	41 77	19 73	25 90	26 78
173 174	Standard deviation Flyash hopper tempera-	14 99	2 111	9 109	8 127	4 116	2 103	5 104	11 88
174 175	ture, °F Standard deviation Collector gas tempera- ture, °F	16 1407	2 1358	3 1491	10 1678	19 1661	3 1571	3 1300	4 1246
175 176	Standard deviation Filter wall tempera- ture, °F	51 96	15 94	17 105	29 124	46 91	20 88	34 112	31 84
176 180	Standard deviation Collector differential	13 14.7	3 2.1	5 4.8	5 10.9	16 8.3	2.2	4 3.7	3 2.9
180	pressure, psid Standard deviation	2.1	0.3	0.6	3.1	0.8	0.1	0.2	0.3

TABLE 4. - Continued. (e) Continued. - PFB system solids discharge data

Data	Parameter					Test				
chan- nel		МЗ	M4	M5	M6	M7	M8	M9	M11	M12
049	Solids discharge pipe temperature, °F	59	63	61	54	55	51	62	63	67
049 118	Standard deviation Solids discharge coolant	2 65	2 66	2 66	2 64	1 63	4 60	2 63	2 63	1 64
118 119	temperature, °F Standard deviation Solids discharge probe	1 (b)	0 (b)	1 (b)	0 (b)	0 (b)	8 (b)	0 (b)	0 (b)	2 (b)
119	coolant temperature, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
023 023 136 136	Solids discharge, 1b Standard deviation Gas sample pressure, psia Standard deviation	29.7 (b) 15.5 1.0	24.4 (b) 19.3 3.3	22.8 (b) 19.8 3.7	4.3 (b) 15.7 0.9	6.7 (b) 14.6 0.3	30.0 (b) 16.1 1.8	48.0 (b) 17.4 2.4	30.5 (b) 15.8 1.0	22.3 (b) 19.0 4.2
137	Gas sample venturi differ- ential pressure, psid	0.7	2.6	2.4	0.7	0.1	0.8	1.0	0.5	1.4
137 138 138 025 025 139	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.5 156 39 26.2 (b) 145	0.9 297 74 35.9 (b) 235	1.5 305 72 22.7 (b) 226	0.4 165 33 9.3 (b) 145	0.1 78 10 6.0 (b) 117	1.0 181 109 26.1 (b) 156	0.8 229 48 35.0 (b) 177	0.3 163 32 21.7 (b) 160	1.2 235 81 36.0 (b) 231
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	22 (b)	42 (b)	35 (b)	24 (b)	20 (b)	35 (b)	28 (b)	28 (b)	48 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
141 150	Standard deviation Collector differential	(b) 1.4	(b) 4.1	(b) 4.1	(b) 1.4	(b) 8.0	(b) 2.0	(b) 7.7	(b) 8.9	(b) 6.3
150 165	pressure, psid Standard deviation Collector wall tempera-	0.2 294	0.1 346	0.1 374	0.1 316	0.1 275	0.1 293	2.9 312	1.0 321	0.2 319
165 166	ture, °F Standard deviation Collector gas tempera- ture, °F	11 1483	14 1684	6 1702	16 1562	13 1374	8 1407	3 1422	4 1533	8 1679
166 173	Standard deviation Collector wall tempera- ture, °F	30 77	15 73	9 68	14 63	31 77	12 62	13 82	15 87	12 85
173 174	Standard deviation Flyash hopper tempera-	14 124	4 106	2 108	7 81	1 85	5 74	7 90	12 98	3 150
174 175	ture, F Standard deviation Collector gas tempera-	66 1393	10 1611	8 1636	10 1486	4 1306	4 1350	5 1368	4 1464	16 1627
175 176	ture, °F Standard deviation Filter wall tempera-	34 92	19 105	9 116	18 96	33 88	8 87	9 102	16 104	14 97
176 180	ture, F Standard deviation Collector differential	2 3.5	4 7.8	7.7	7 3.6	2 2.6	2 4.5	4 4.3	0 3.4	4 7.0
180	pressure, psid Standard deviation	0.3	0.2	0.7	0.2	0.1	0.3	0.2	0.3	1.1

TABLE 4. - Continued.

(e) Continued. - PFB system solids discharge data

Data chan-	Parameter				Test			
nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
049	Solids discharge pipe temperature, °F	66	67	84	65	73	77	73
049	Standard deviation Solids discharge coolant temperature, °F	5	5	8	8	10	9	9
118		65	66	73	67	69	71	73
118 119	Standard deviation Solids discharge probe coolant temperature, °F	(b)	1 (b)	3 (b)	1 (b)	2 (b)	6 (b)	2 (b)
119	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differential pressure, psid	(b)						
023		1380	154	482	439	518	71.7	107
023		(b)						
136		18.3	18.7	19.9	21.3	20.2	28.5	23.0
136		1.9	2.3	2.1	2.4	3.2	4.8	5.6
137		1.8	1.7	1.9	1.9	1.5	1.0	1.8
137	Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper temperature, °F	0.7	0.4	0.5	0.4	0.6	0.3	1.0
138		209	207	277	287	224	191	250
138		55	52	44	43	49	44	93
025		186	176	494	767	144	91.7	80.1
025		(b)						
139		191	177	245	256	216	280	283
139	Standard deviation Hopper coolant tempera- ture, °F	40	33	36	34	42	54	31
140		(b)						
140 141	Standard deviation Flyash collector tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
141	Standard deviation	(b)						
150	Collector differential	5.3	2.4	3.8	3.5	3.5	3.7	3.8
150 165	pressure, psid Standard deviation Collector wall tempera- ture, °F	0.8 292	0.5 313	0.6 340	0.6 337	0.8 315	0.6 315	0.3 319
165 166	Standard deviation Collector gas tempera- ture, °F	57 1630	68 1556	31 1689	39 1642	54 1611	58 1668	9 1742
166	Standard deviation Collector wall tempera- ture, °F	206	352	72	140	255	161	16
173		76	70	88	66	76	80	78
173	Standard deviation Flyash hopper tempera- ture, °F	7	4	8	9	10	9	9
174		95	90	105	92	95	101	95
174 175	Standard deviation Collector gas tempera- ture, °F	9 1567	8 1492	8 1619	8 1582	10 1510	11 1574	11 1657
175	Standard deviation	215	371	75	74	290	200	21
176	Filter wall tempera-	92	97	114	101	103	112	111
176	ture, F Standard deviation Collector differential	14	9	9	10	11	12	8
180		5.2	3.2	5.4	5.1	4.3	5.0	5.9
180	pressure, psid Standard deviation	0.9	0.6	0.7	0.6	1.0	1.0	0.6

TABLE 4. - Continued.

(e) Concluded. - PFB system solids discharge data

Data	Parameter				T	est			
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
049	Solids discharge pipe temperature, °F	59	53	76	74	69	60	55	52
049 118	Standard deviation Solids discharge coolant temperature, °F	3 68	3 69	1 69	1 68	3 69	3 67	1 69	1 66
118 119	Standard deviation Solids discharge probe	(b)	3 (b)	1 (b)	1 (b)	(p)	2 (b)	3 (b)	(b)
119 023 023 136 136 137	Standard deviation Solids discharge, lb Standard deviation Gas sample pressure, psia Standard deviation Gas sample venturi differ-	(b) 36.7 (b) 21.2 2.0 1.9	(b) 24.3 (b) 20.1 2.8 1.7	(b) 29.8 (b) 20.2 3.7 1.7	(b) 27.3 (b) 22.3 1.2 1.9	(b) 24.9 (b) 18.5 1.3 0.7	(b) 50.7 (b) 20.9 2.8 2.0	(b) 46.3 (b) 19.9 2.5 1.7	(b) 23.6 (b) 16.6 1.3 0.4
137 138 138 025 025 139	ential pressure, psid Standard deviation Gas sample temperature, °F Standard deviation Flyash solids, 1b Standard deviation Flyash hopper tempera-	0.4 274 71 48.8 (b) 186	0.4 280 42 8.9 (b) 180	0.8 252 89 40.3 (b) 169	0.3 309 15 29.4 (b) 185	0.1 229 19 28.8 (b) 145	0.3 298 74 60.2 (b) 187	0.1 311 45 56.6 (b) 203	0.2 184 20 33.8 (b) 120
139 140	ture, °F Standard deviation Hopper coolant tempera- ture, °F	30 (b)	15 (b)	38 (b)	4 (b)	9 (b)	29 (b)	23 (b)	10 (b)
140 141	Standard deviation Flyash collector tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
141 150	Standard deviation Collector differential	(b) 1.0	(b) 0.7	(b) 2.7	(b) 3.0	(b) 1.3	(b) 3.4	(b) 3.5	(b) 1.0
150 165	pressure, psid Standard deviation Collector wall tempera— ture, °F	0.1 312	0 310	0.9 269	0.2 310	0 303	0.2 318	0.2 346	0.1 286
165 166	Standard deviation Collector gas tempera- ture, °F	54 1645	7 1670	64 1540	7 1652	12 1543	48 1600	1 1636	19 1472
166 173	Standard deviation Collector wall tempera- ture, °F	68 60	22 53	286 79	9 76	24 70	41 61	12 55	39 52
173 174	Standard deviation Flyash hopper tempera- ture, °F	5 85	4 76	3 91	2 93	2 90	3 79	1 76	1 69
174 175	Standard deviation Collector gas tempera- ture, °F	6 1572	4 1612	5 1380	3 1544	4 1425	3 1488	4 1567	2 1394
175 176	Standard deviation Filter wall tempera-	83 88	14 77	371 93	8 95	21 101	85 95	10 102	42 88
176 180	ture, °F Standard deviation Collector differential	10 1.6	3 1.1	9 3.7	3 2.0	4 1.0	11 5.4	5.7	5 1.6
180	pressure, psid Standard deviation	0.1	0.2	0.8	0.4	0.1	0.3	0.2	0.1

Table 4. - Continued

(f) Coolant system data

Data	Parameter					Test				
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
051	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
077	Coolant inlet temperature,	68	66	64	54	57	81	74	63	62
077 078	Standard deviation Coolant inlet pressure,	0 55.7	6 53.0	7 50.0	1 51.2	5 47 . 9	1 55.4	7 52 . 9	$\begin{smallmatrix}1\\56.1\end{smallmatrix}$	2 50.9
078	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.6	4.2	3.0	2.3	4.7	0.9	14.7	0.5	2.9
079		1.95	1.73	1.75	1.67	1.68	1.07	0.86	0.76	0.91
079		0.02	0.29	0.10	0.07	0.14	0.02	0.24	0	0.23
080		35.2	35.5	32.4	35.2	31.8	43.0	43.9	49.5	40.9
080	psia Standard deviation Outlet'1 coolant tempera- ture, °F	0.3	2.3	1.4	2.7	2.5	0.4	11.2	0.4	7.7
081		73	68	63	56	59	77	66	57	57
081	Standard deviation Outlet 2 coolant tempera- ture, °F	1	8	9	1	7	0	9	0	1
082		74	68	62	56	59	77	66	57	56
082	Standard deviation Outlet 3 coolant tempera- ture, F	1	8	9	1	7	0	10	0	1
083		74	68	63	56	59	77	66	57	56
083	Standard deviation Outlet 4 coolant tempera- ture, °F	1	8	9	1	7	0	9	0	1
084		74	68	62	56	58	77	66	57	56
084	Standard deviation Outlet 5 coolant tempera- ture, °F	1	8	9	1	7	0	10	0	1
085		119	121	113	109	112	129	130	131	122
085	Standard deviation Outlet 6 coolant tempera- ture, °F	2	4	6	2	4	1	12	1	13
086		74	68	62	56	59	77	66	57	56
086	Standard deviation Outlet 7 coolant temperature, °F	1	8	9	1	7	0	9	0	1
087		74	68	62	56	59	77	66	58	57
087	Standard deviation Outlet 8 coolant temperature, °F	1	8	9	1	7	0	9	0	1
088		115	115	109	103	106	130	130	131	123
088	Standard deviation Outlet 9 coolant tempera- ture, °F	2	4	7	2	4	1	13	1	14
089		74	68	63	56	59	77	66	58	57
089	ture, F Standard deviation	1	8	9	1	7	0	9	O	1

087	Outlet 7 coolant tempera-	74	68	62	56	59	77	66	58	57
087	ture, [*] F Standard deviation	1	8	9	1	7	0	9	0	1
088	Outlet 8 coolant tempera-	115	115	109	103	106	130	130	131	123
	ture, °F									
880	Standard deviation	2	4	7	2	4	1	13	1	14
089	Outlet 9 coolant tempera-	74	68	63	56	59	77	66	58	57
	ture, °F		_			_		•	0	1
089	Standard deviation	_1	8	.9	1	7	0	9	0	1
090	Outlet 10 coolant tempera-	74	68	63	56	59	77	66	57	56
000	ture, °F	1	0	0	1	7	0	9	0	1
090 091	Standard deviation Outlet 11 coolant tempera-	1 74	8 68	9 63	56	59	77	66	57	1 57
091	ture, F	74	00	03	30		• •		•	
091	Standard deviation	1	8	9	1	7	0	9	0	1
092	Outlet 12 coolant tempera-	74	68	63	56	59	77	66	57	
	ture, °F									_
092	Standard deviation	_1	8	9	1	7	0	9	0	1
093	Outlet 13 coolant tempera- ture, °F	74	68	63	56	59	77	66	58	57
093	Standard deviation	1	8	9	1	7	0	9	0	1
094	Outlet 14 coolant tempera-	119	120	112	108	110	139	135	137	129
	ture, °F									
094	Standard deviation	2	4	7	2	4	1	10	1	15
095	Outlet 15 coolant tempera-	74	68	62	56	59	77	66	57	56
005	ture, F	1	0	0	1	7	0	9	0	1
095 096	Standard deviation	1 74	8 68	9 63	56	59	77	66	57	57
	Outlet 16 coolant tempera- ture, °F					39				1
096	Standard deviation	. 1	8	9	1	/ /	()	9 (1.)	(,)	/ L \
096	Coolant flow rate, gal/min	(b)								
096	Standard deviation	(b)	(b)	(b)	(b) 22.8	(b) 23.0	(b) 20.0	(b) 16.4	(b) 14.7	(b) 17.5
097	Coolant flow rate, gal/min Standard deviation	26.5 0.2	23.8 3.5	24.0 1.3	0.8	1.7	0.3	4.5	0.1	4.3
097 098	Coolant outlet tempera-	85	81	75	69	72	91	83	77	74
030	ture, °F	03	01	7.5	03	, _	7.1		• •	
098	Standard deviation	1	6	8	1	6	0	7	0	3.7
101	Coolant flow rate, gal/min	1.86	1.77	1.68	1.69	1.61	1.45	1.57	1.86	1.73
101	Standard deviation	0.01	0.11	0.10	0.06	0.11	0.02	0.23	0.01	0.09
102	Coolant outlet pressure,	42.6	40.8	38.7	39.6	37.5	47.4	43.1	43.1	39.7
	°F									
102	Standard deviation	0.4	3.0	2.0	1.8	3.4	0.6	12.5	0.4	1.9
103	Outlet 17 coolant tempera-	73	68	62	56	58	76	66	57	56
102	ture, °F	1	0	0	1	7	0	10	0	1
103	Standard deviation	1	8	9	1	/	U	10	U	T

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

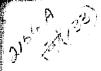


Table 4. - Continued

(f) Continued. Coolant system data

Data	Parameter			•		Test				
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
104	Outlet 18 coolant tempera- ture, °F	(b)	54	46	54	53	68	61	56	55
104	Standard deviation	(b)	9	13	1	6	1	8	0	1
105	Outlet 19 coolant tempera- ture, °F	74	68	62	56	59	77	66	57	56
105	Standard deviation	1	8	9	1	7	0	10	0	1
106	Outlet 20 coolant tempera- ture, F	74	68	62	56	59	77	66	57	56
106	Standard deviation	1	8	9	1	7	0	10	0	1
107	Outlet 21 coolant tempera- ture, °F	74	68	62	56	58	77	66	57	56
107	Standard deviation	1	8	9	1	7	0	10	0	2
108	Outlet 22 coolant tempera- ture, °F	69	69	68	56	61	84	78	65	63
108	Standard deviation	1	4	6	2	5	1	6	1	1
109	Outlet 23 coolant tempera- ture, °F	74	68	62	56	59	77	66	57	56
109	Standard deviation	1	8	9	1	7	0	10	0	1
110	Outlet 24 coolant tempera- ture, °F	74	68	63	56	59	77	66	57	57
110	Standard deviation	1	8	9	1	7	0	9	0	1
111	Outlet 25 coolant tempera- ture, °F	73	68	62	56	59	77	66	57	56
111	Standard deviation	1	8	9	1	7	0	10	0	1
112	Outlet 26 coolant tempera- ture, °F	73	68	63	56	59	77	66	57	57
112	Standard deviation	1	8	9	1	7	0	10	0	1
113	Coolant flow rate, gal/min	11.4	10.9	10.3	10.4	9.9	8.8	9.6	11.4	10.7
113	Standard deviation	0.1	0.7	0.6	0.4	0.7	0.1	1.4	0.1	0.5
114	Coolant outlet tempera- ture, °F	74	68	62	56	58	77	66	57	56
114	Standard deviation	1	8	9	1	7	0	10	0	1
115	Wall coolant top tempera- ture, °F	86	84	80	73	78	95	104	98	94
115	Standard deviation	2	6	8	1	5	4	3	1	2
116	Wall coolant middle temperature, °F	112	113	110	103	108	89	88	76	70
116	Standard deviation	2	5	5	2	3	2	2	1	2
117	Wall coolant bottom temperature, °F	81	78	74	66	69	84	75	65	64
117	Standard deviation	1	6	8	1	5	1	9	0	2
120	Wall coolant total	86	81	78	72	75	90	79	66	66

	ture, °F		vertice and and			and the second of the second o	. To de la contracté	Par Carrellan an arreit Barbatagio	emintelt it store on, can extract the	v. v. villakti skilden, ski vitor. u viseli
115	Standard deviation	2	6	8	1	5	4	3	1	2
116	Wall coolant middle	112	113	110	103	108	89	88	76	70
	temperature, °F									_
116	Standard deviation	2	5	5	2	3	2	2	1	2
117	Wall coolant bottom	81	78	74	66	69	84	75	65	64
	temperature, °F								_	_
117	Standard deviation	1	6	8	1	5	1	9	0	2
120	Wall coolant total	86	81	78	72	75	90	79	66	66
	temperature, °F			_	_	_			•	1
120	Standard deviation	1	7	7	1	5	1	11	2	1
121	Wall coolant flow rate, gal/min	8.86	8.40	7.96	8.03	7.69	6.01	6.16	7.29	6.77
121	Standard deviation	0.09	0.51	0.46	0.29	0.55	0.09	0.93	0.04	0.31
140	Wall coolant outlet	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	pressure, psia	(-/	(-/	(-/	()					
140	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure, psia	14.1	14.6	14.7	15.2	15.1	30.3	22.7	14.7	14.6
145	Standard deviation	0	0.8	0.5	0.1	0.5	0.1	8.6	0	0.1
C26	Heat exchanger heat trans-	149890	151990	150510	151700	150860	142780	131400	147140	148710
	fer rate, Btu/hr								0.475	5400
C26	Standard deviation	4167	7061	4635	3942	7434	2831	2211	3475	5423
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C27	Standard déviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate, Btu/hr	54907	55497	60519	64575	64356	41482	40493	31189	31311
C28	Standard deviation	4730	6798	8037	5792	9473	2806	12034	7255	3436
C30-1	Heat transfer coeffici-	48.6	49.2	48.4	46.8	46.8	41.5	39.2	42.9	43.2
	ent 1, Btu/hr ft ² °F									
C30-1	Standard deviation	0.7	1.3	1.0	1.3	1.8	0.2	6.1	0.3	1.4
C58	Total heat transfer rate, Btu/hr	337070	321920	324490	342220	333920	285170	276000	273840	289140
C58	Standard deviation	13511	20814	20144	12460	32606	8832	70023	5927	14227
C30-2	Heat transfer coeffici-	56.5	56.4	56.5	54.0	53.5	54.1	50.5	55.7	55.9
300 L	ent 2, Btu/hr ft ² °F						_			
C30-2	Standard deviation	0.9	1.6	0.5	1.7	1.3	0.7	8.5	0.4	0.7
C30-3	Heat transfer coeffici-	61.2	61.3	60.5	58.3	57.9	63.0	54.6	59.5	60.7
	ent 3, Btu/hr ft ² °F									
C30-3	Standard deviation	0.7	1.8	0.5	1.4	1.4	0.7	7.1	0.2	1.1

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

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Table 4. - Continued

(f) Continued. Coolant system data

	Data	Parameter				Т	est			
	chan- nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 72	(b) (b) (b) (b) 76	(b) (b) (b) (b) 64	(b) (b) (b) (b) 63	(b) (b) (b) (b) 61	(b) (b) (b) (b) 63	(b) (b) (b) (b) 73	(b) (b) (b) (b) 68
	077 078	Standard deviation Coolant inlet pressure, psia	8 68.4	7 52.3	1 39.8	1 50.6	1 51.6	2 46.2	7 48 . 5	1 34.7
1	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	18.8 1.53 0.29 42.4	13.0 1.20 0.20 36.0	3.2 1.08 0.06 26.6	3.8 1.28 0.07 32.2	1.2 1.31 0.02 32.9	2.4 1.22 0.04 29.7	10.3 1.26 0.19 30.7	1.4 1.00 0.03 23.8
	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	9.9 (b)	8.9 (b)	1.6 (b)	1.9 (b)	0.6 (b)	1.1 (b)	5.4 (b)	0.7 (b)
	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
	083 084	Standard deviation Outlet 4 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b) (b)
	084 085	Standard deviation Outlet 5 coolant tempera- ture, F	(b) 110	(b) 139	(b) 117	(b) 107	(b) 112	(b) 123	(b) 133	(b) 151
	085 086	Standard deviation Outlet 6 coolant tempera- ture, F	3 (b)	11 (b)	4 (b)	2 (b)	3 (b)	3 (b)	6 (b)	2 (b)
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b) (b)	(b)						
	087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) 109	(b) 130	(b) 117	(b) 104	(b) 107	(b) 109	(b) 118	(b) 129
	088 089	Standard deviation Outlet 9 coolant tempera-	3 (b)	9 (b)	3 (b)	2 (b)	1 (b)	2 (b)	4 (b)	2 (b)

FOLDOUT FRAME

		ture, F	A Accessor To the Market of Billion	magazini magazini	- remains and a set	कः चन्त्राच्याचे कहेता न संक्ष्य कारका क्ष्यां कारका क्ष्यां कारका है। क	Parker Children et alle et al.			and me, who have more than the Careford of the
	087 088	Standard deviation Outlet 8 coolant tempera—	(b) 109	(b) 130	(b) 117	(b) 104	(b) 107	(b) 109	(b) 118	(b) 129
	000	ture, °F		130	117	104	107		110	
	088	Standard deviation	3	9	3	2	1	2	4	2
	089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	000	ture, °F	(1.)	/1. \	41.3	(1.)	/1 \	/1.\	753	/ ៤ \
	089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
	090	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
		ture, °F	` ,	` '	• •	. ,	, ,	. ,		
	091	Standard deviation	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
	092	Outlet 12_coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	002	ture, F	(5)	(b.)	(b)	(b)	(b)	(b)	/h\	(b)
	092 093	Standard deviation Outlet 13 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
	093	ture, F	(0)	(10)	(1)	(0)	(5)	(6)	(6)	(5)
	093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	094	Outlet 14 coolant tempera-	114	133	115	103	105	109	118	128
	004	ture, °F	2	c	2	2	1	2	4	2
	094	Standard deviation Outlet 15 coolant tempera-	(b)	6 (b)	3 (b)	2 (b)	1 (b)	(b)	(b)	(b)
	095	ture, F	(0)	(n)	(0)	(0)	(5)	(5)	(5)	(5)
	095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	096	Outlet 16 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, °F	(1.)	(1.)	(1.)	(1.)	(1.)	/+ \	71.	(1.)
	096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	096	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
	096 097	Standard deviation Coolant flow rate, gal/min	(b) 29.6	(b) 22.7	(b) 20.4	(b) 24.3	(b) 24.5	(b) 22.6	23.3	18.1
	097	Standard deviation	5.6	4.1	1.2	0.6	0.4	0.8	3.3	0.6
	098	Coolant outlet tempera-	80	87	71	68	68	69	80	74
		ture, °F								
	098	Standard deviation	8	8	1	1	1	1	9	1
	101	Coolant flow rate, gal/min	2.00	1.50	1.34	1.61	1.62	1.50	2.13	1.21
	101	Standard deviation	0.33	0.27	0.08	0.04	0.02	0.05	0.81	0.04
	102	Coolant outlet pressure,	53.9	43.3	32.5	41.1	41.3	37.2	30.4	28.8
	102	Standard deviation	14.2	10.7	2.4	1.6	0.7	1.9	2.3	0.8
1	103	Outlet 17 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, °F	2.3	4. 1	/. \	7. 3	1	/. \	(1.)	7. 3
	103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

FOLDOUT FRAME



Table 4. - Continued

(f) Continued. Coolant system data

Data	Parameter		Test										
chan- nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B				
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
105	Standard deviation	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)				
106	Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
107	Standard deviation	(p)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
108	Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
108	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
109	Outlet 23 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
110	Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
110	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
111	Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
111	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
112	Outlet 26 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
112	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
113	Coolant flow rate, gal/min	12.9	10.2	9.2	11.0	11.0	10.2	14.4	8.2				
113	Standard deviation	2.5	1.8	0.6	0.3	0.2	0.3	5.4	0.2				
114	Coolant outlet tempera- ture, °F	70	73	57	58	56	57	68	57				
114	Standard deviation	10	10	0	1	1	1	11	1				
115	Wall coolant top tempera- ture, F	102	110	104	99	95	99	114	117				
115	Standard deviation	4	2	2	2	2	5	4	1				
116	Wall coolant middle temperature, °F	78	87	80	74	70	73	88	92				
116	Standard deviation	5	2	2	2	2	4	3	1				
117	Wall coolant bottom temperature, °F	76	83	69	67	66	67	79	73				
117	Standard deviation	8	7	1	1	1	1	8	1				
120	Wall coolant total	78	82	67	64	Manusca & Kings		and the Course					

ture, F	a migration (see	No. 2 . 12 . 12 . 12 . 12 . 12 . 12 . 12
115 Standard deviation 4 2 2 2 2 5	4	1
116 Wall coolant middle 78 87 80 74 70 73	88	92
temperature, °F		
116 Standard deviation 5 2 2 2 2 4	3	1
117 Wall coolant bottom 76 83 69 67 66 67	79	73
temperature, °F		
117 Standard deviation 8 7 1 1 1 1	8	1
120 Wall coolant total 78 82 67 64 65 67	76	72
temperature, °F	•	
120 Standard deviation 8 9 1 1 0 1	8	1
121 Wall coolant flow rate, 8.1 6.4 5.6 6.9 6.9 6.4	6.5	5.0
gal/min		
121 Standard deviation 1.5 1.2 0.4 0.2 0.1 0.2	0.9	0.2
140 Wall coolant outlet (b) (b) (b) (b) (b)	(b)	(b)
pressure, psia		
140 Standard deviation (b) (b) (b) (b) (b)	(p)	(b)
141 Coolant flow rate, gal/min (b) (b) (b) (b) (b)	(b)	(b)
141 Standard deviation (b) (b) (b) (b) (b)	(b)	(b)
145 Coolant outlet pressure, 16.2 19.6 14.7 15.2 15.1 14.8 psia	14.9	14.3
145 Standard deviation 1.1 7.2 0.1 0.1 0.1	0.7	0.1
		62890
fer rate, Btu/hr		
C26 Standard deviation 3203 8652 3603 1884 4682 3629	7078	4805
C27 Heat extractor heat trans— (b) (b) (b) (b) (b)	(b)	(b)
fer rate, Btu/hr		
C27 Standard deviation (b) (b) (b) (b) (b)	(b)	(b)
·	24997	39249
Btu/hr		
C28 Standard deviation 3993 3713 1001 3648 4182 3964	7742	1798
C30-1 Heat transfer coeffici- 46.1 57.1 51.1 (b) 55.3 60.1	61.8	64.4
ent 1, Btu/hr ft ² °F		1.0
C30-1 Standard deviation 1.1 4.7 0.4 (b) 1.6 1.3	3.8	1.9
C58 Total heat transfer rate, 288390 298190 278960 248940 298900 298270 2 Btu/hr	216060 34	41890
C58 Standard deviation 12423 30416 7080 10155 12345 12931	20625	9829
C30-2 Heat transfer coeffici- 58.1 64.6 65.3 (b) 64.3 61.0 ent 2, Btu/hr ft ² °F	60.2	63.5
C30-2 Standard deviation 1.3 2.4 0.6 (b) 0.7 1.1	0.7	1.3
C30-3 Heat transfer coeffici- 64.7 66.9 62.4 (b) 61.1 60.3	59.4	61.7
ent 3, Btu/hr ft ² °F		
C30-3 Standard deviation 1.6 2.3 0.7 (b) 0.5 0.9	0.9	1.1

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

	(f) Cont	inued.	Coolant	system a	ata				
Data chan-	Parameter				Test				
nel		C1	С3	C8	C11	C12	C16	C17	
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 73	(b) (b) (b) (b) 61	(b) (b) (b) (b) 61	(b) (b) (b) (b) 62	(b) (b) (b) (b) 66	(b) (b) (b) (b) 77	(b) (b) (b) (b) 76	
077 078	°F Standard deviation Coolant inlet pressure, psia	6 59.3	1 46.4	1 44.7	1 47.9	7 50 . 1	1 59.0	1 50.3	
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	13.8 2.19 0.43 40.2	1.1 1.99 0.03 30.8	1.6 1.97 0.05 29.9	2.2 2.06 0.06 31.6	4.6 2.12 0.12 32.8	11.9 2.30 0.32 38.2	0.4 2.18 0.01 31.9	
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	7.8 (b)	0.6 (b)	0.9 (b)	1.2 (b)	2.6 (b)	7.0 (b)	0.1 (b)	
081 082	Standard deviation Outlet 2 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b) 116	(b) 107	(b) 108	(b) 108	(b) 107	(b) 116	(b) 124	
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	10 (b)	1 (b)	(b)	2 (b)	5 (b)	6 (b)	4 (b)	
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) 115	(b) 106	(b) 107	(b) 107	(b) 107	(b) 115	(b) 123	
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	9 (b)	1 (b)	(b)	2 (b)	4 (b)	6 (b)	4 (b)	
089	Standard deviation	(b)	(b)	(b)	(b)	mesical (b)	(b)	acontrium (b)	en de la companya de

	Commence of the second							
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) 115	(b) 106	(b) 107	(b) 107	(b) 107	(b) 115	(b) 123
088 089	Standard deviation	9 (b)	1 (b)	2 (b)	2 (b)	4 (b)	6 (b)	4 (b)
089 090	Outlet 9 coolant tempera- ture, °F Standard deviation Outlet 10 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
090	ture, °F Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
091 091	Outlet 11 coolant tempera- ture, °F Standard deviation	(b)						
092 092	Outlet 12 coolant tempera- ture, °F Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
093 093	Outlet 13 coolant tempera- ture, °F Standard deviation	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	118	109	109	108	108	116	124
094 095	Standard deviation Outlet 15 coolant tempera- ture, °F	9 (b)	1 (b)	2 (b)	2 (b)	(b)	6 (b)	4 (b)
095 096	Standard deviation Outlet 16 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
096 096 096 097	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min	(b) (b) (b) 24.8	(b) (b) (b) 22.5	(b) (b) (b) 22.0	(b) (b) (b) 23.0	(b) (b) (b) 23.6	(b) (b) (b) 26.0	(b) (b) (b) 24.6
097 098	Standard deviation Coolant outlet tempera- ture, °F	4.8 85	0.4 74	0.6 74	0.7 75	1.5 77	3.5 87	0.1 88
098 101 101	Standard deviation Coolant flow rate, gal/min Standard deviation	6 2.2 0.5 51.2	2.0 0.1 39.0	1 1.9 0.1 37.6	1 2.0 0.1 40.2	6 2.0 0.2 41.8	2 2.3 0.3 49.0	2 2.1 0 41.5
102	Coolant outlet pressure,	31.2	39.0	37.0		.1.0	1500	
	°F Standard deviation Outlet 17 coolant temperature, °F	10.8 (b)	0.9 (b)	1.4 (b)	1.8 (b)	3.6 (b)	9.5 (b)	0.2 (b)

b Data or results were mot obtained.

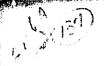


Table 4. - Continued

(f) Continued. Coolant system data

Data	Parameter				Test_			
chan- nel		C1	C3	C8	C11	C12	C16	C17
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
105 106	Standard deviation Outlet 20 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 10.9 2.0 72	(b) 10.2 0.2 60	(b) 9.9 0.3 61	(b) 10.4 0.4 62	(b) 10.7 0.6 65	(b) 11.7 1.6 76	(b) 11.1 0 75
114 115	ture, °F Standard deviation Wall coolant top tempera- ture, °F	6 82	1 84	1 82	1 77	7 91	1 97	1 99
115 116	Standard deviation Wall coolant middle temperature, °F	3 63	1 61	2 59	2 54	3 64	2 73	1 74
116 117	Standard deviation Wall coolant bottom temperature, °F	1 80	1 71	2 72	2 72	4 76	2 86	1 85
117 120	Standard deviation Wall coolant total	5 77	1 68	1 68	1 70	5 74	2 86	2 86

 115	Standard deviation	3	1	2	2	3	2	1
116	Wall coolant middle temperature, °F	63	61	59	54	64	73	74
116	Standard deviation	1	1	2	2	4	2	1
117	Wall coolant bottom temperature, °F	80	71	72	72	76	86	85
117	Standard deviation	5	1	1	1	5	2	2
120	Wall coolant total temperature, °F	77	68	68	70	74	86	86
120	Standard deviation	6	0	0	1	7	3	1
121	Wall coolant flow rate, gal/min	6.8	6.1	5.9	6.3	6.5	7.0	6.7
121	Standard deviation	1.3	0.1	0.2	0.2	0.5	1.0	0
140	Wall coolant outlet pressure, psia	(b)						
140	Standard deviation	(b)						
141	Coolant flow rate, gal/min	(b)						
141	Standard deviation	(b)						
145	Coolant outlet pressure, psia	20.6	15.4	15.2	15.4	15.8	17.9	14.1
145	Standard deviation	7.3	0.1	0.1	0.1	0.6	5.7	0
C26	Heat exchanger heat trans- fer rate, Btu/hr	138920	142340	138590	140150	134850	230100	154470
C26	Standard deviation	3998	1604	3424	1979	9330	3372	6754
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)						
C27	Standard deviation	(b)						
C28	Wall heat transfer rate, Btu/hr	11675	21810	19048	22853	27068	32342	35584
C28	Standard deviation	3473	4065	3612	4783	7547	7091	2771
C30-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	50.8	48.6	48.7	32.7	45.9	47.5	51.6
C30-1	Standard deviation	0.9	0.3	0.7	0.3	0.7	0.5	1.3
C58	Total heat transfer rate, Btu/hr	229770	262780	256650	258230	212650	260880	328520
C58	Standard deviation	26265	11133	10978	14026	22624	8067	8355
C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	46.6	44.6	44.3	33.0	43.2	43.7	47.3
C30-2	Standard deviation	0.9	0.5	0.6	0.3	1.3	0.4	1.0
C30-3	Heat transfer coeffici- ent 3, Btu/hr ft ² °F	51.1	48.4	47.4	50.7	45.1	46.3	50.0
C30-3	Standard deviation	1.3	0.4	0.7	0.4	1.1	1.0	1.2

b Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

Data	Parameter	Test										
chan- nel		D6	D7	D2	D7	D10	D3	D4				
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 74	(b) (b) (b) (b) 68	(b) (b) (b) (b) 72	(b) (b) (b) (b) 71	(b) (b) (b) (b) 74	(b) (b) (b) (b) 75	(b) (b) (b) (b) 73				
077 078	Standard deviation Coolant inlet pressure, psia	0 60.7	2 54 . 6	1 63.1	1 66.1	4 65.9	1 50.5	1 67.2				
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, psia	0.7 1.6 0.1 45.9	4.0 1.8 0.2 37.0	2.2 1.9 0.2 42.5	11.6 2.1 0.5 45.4	14.0 2.0 0.4 46.1	13.0 1.8 0.4 32.9	6.7 2.1 0.2 44.8				
080 081	Standard deviation Outlet 1 coolant tempera- ture, °F	0.4 (b)	5.2 (b)	4.2 (b)	5.4 (b)	9.7 (b)	7.4 (b)	4.9 (b)				
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)				
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)				
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)				
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b) 105	(b) 97	(b) 99	(b) 94	(b) 97	(b) 107	(b) 102				
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b)	5 (b)	2 (b)	4 (b)	6 (b)	5 (b)	3 (b)				
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)				
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) 123	(b) 115	(b) 115	(b) 109	(b) 113	(b) 130	(b) 126				
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	1 (b)	5 (b)	(b)	7 (b)	8 (b)	9 (b)	5 (b)				

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errore en en enemenagement of	Cal. 22 Sales Landon Marian Control of Street Maria and Assessment	od Middinenanana activities	Military Control of the Control of t	and the second s		44 San Sandanas Ada an San		
086 087	Standard deviation Outlet 7 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	ture, °F		` '		, .			
087	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
880	Outlet 8 coolant tempera- ture, °F	123	115	115	109	113	130	126
088	Standard deviation	1	5	2	7	8	9	5
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)				
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	125	114	114	107	110	123	96
094	Standard deviation	1	5	2	7	. 8	8	12
095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
096	Outlet 16 coolant tempera- ture, F	(b)						
096	Standard deviation	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
096 ე96	Coolant flow rate, gal/min Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
097	Coolant flow rate, gal/min	20.9	23.1	25.0	25.0	24.3	22.9	26.4
097	Standard deviation	0.2	1.4	1.5	4.9	4.3	3.9	2.3
098	Coolant outlet tempera-	85	79	82	80	82	86	81
	ture, °F							
098	Standard deviation	0	3	1	2	4	2	1
101	Coolant flow rate, gal/min	2.0	2.1	2.3	2.3	2.2	2.1	2.4
101	Standard deviation	0.1	0.1	0.1	0.5	0.4	0.4	0.3
102	Coolant outlet pressure,	51	44	45	54	55	40	55
102	Standard deviation	1	5	. 8	. 8	12	10	5
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

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Table 4. - Continued

(f) Continued. Coolant system data

Data	Parameter				Test			
chan- nel		D6	D7	D2	D7	D10	D3	D4
1101		50	σ.	02	<i>.</i>	520		
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Outlet 20 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F			4. 3	/ · · · ·	4. \	(1.)	/ : \
106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Outlet 22 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
100	ture, F	(b)	(b.)	(b.)	(b)	(b)	(b)	(b)
108 109	Standard deviation Outlet 23 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
103	ture, °F	(5)	(5)	(6)	(5)	(5)	(5)	(5)
109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Outlet 24 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F	4. 3	4. 3	4. 3		(1.)	(,)	(1.)
110	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112		(b)	(b)	(b)	(b)	(b)	(b)	(b)
**	Outlet 26 coolant tempera- ture, °F	(5)	(6)	(6)	(5)	(5)	(5)	(-)
112	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
113	Coolant flow rate, gal/min	9.5	10.4	11.2	10.9	10.6	9.9	11.6
113	Standard deviation	0.1	0.6	0.6	2.1	1.8	1.6	0.9
114	Coolant outlet tempera-	74	68	(b)	71	74	75	73
	ture, °F	0	•	/ 1 \	1	0	1	1
114	Standard deviation	0	2	(b)	102	4	$\begin{array}{c} 1 \\ 101 \end{array}$	1 109
115	Wall coolant top tempera- ture, °F	92	96	(b)	102	95	101	109
115	Standard deviation	5	3	(b)	2	7	8	1
116	Wall coolant middle	78	74	(b)	78	70	75	85
	temperature, °F		-	4. \	•	_	<u></u>	1
116	Standard deviation	2	1	(b)	2	3	6	1
117	Wall coolant bottom	93	87	(b)	84	87	94	90
4 4 7	temperature, °F	•	_	(at Second		ini manana kilazirinin	leadaigh a na a de chlaigh	dentification with the

Wall coolant middle	78	74	(b)	78	70	75	85
	2	1	(b)	2	3	6	1
Wall coolant bottom	93	87	(b)	84	87	94	90
	2	3	(b)	2	5	4	1
Wall coolant total temperature, °F	82	76	` 76̇́	77	78	88	81
Standard deviation	1	2	4				4
Wall coolant flow rate, gal/min	4.4	4.8					5.3
Standard deviation							0.4
pressure, psia							(b)
							(b)
							(b)
	(b)						(b)
psia			• •				21.8
Standard deviation							5.5
Heat exchanger heat trans- fer rate, Btu/hr	119180	124550	121830	100790	98050	128860	116150
Standard deviation	2693	2527	2786	1498			17487
Heat extractor heat trans- fer rate, Btu/hr							(b)
						(b)	(b)
Btu/hr							21341
							11297
ent 1, Btu/hr ft ² °F							31.4
							2.0
Btu/hr			. ,				34636
							3836
Heat transfer coeffici- ent 2, Btu/hr ft ² °F							55.8
Standard deviation							1.6
ent 3, Btu/hr ft ² °F							28.8
Standard deviation	2.4	1.2	1.2	1.5	1.1	0.8	16.6
	temperature, °F Standard deviation Wall coolant bottom temperature, °F Standard deviation Wall coolant total temperature, °F Standard deviation Wall coolant flow rate, gal/min Standard deviation Wall coolant outlet pressure, psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, psia Standard deviation Heat exchanger heat transfer rate, Btu/hr Standard deviation Heat extractor heat transfer rate, Btu/hr Standard deviation Wall heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 1, Btu/hr ft2 °F Standard deviation Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 3, Btu/hr ft2 °F	temperature, °F Standard deviation 2 Wall coolant bottom 93 temperature, °F Standard deviation 2 Wall coolant total 82 temperature, °F Standard deviation 1 Wall coolant flow rate, 93/min 8 Standard deviation 0.1 Wall coolant outlet (b) pressure, psia 8 Standard deviation (b) Coolant flow rate, gal/min 8 Standard deviation (b) Coolant flow rate, gal/min 8 Standard deviation (b) Coolant outlet pressure, 930.3 93 psia 8 Standard deviation 0.1 Heat exchanger heat transfer rate, 8tu/hr 9 Standard deviation 2693 Heat extractor heat transfer rate, 8tu/hr 9 Standard deviation (b) Wall heat transfer rate, 8tu/hr 9 Standard deviation 1803 Heat transfer coefficienent 1, 8tu/hr ft² °F Standard deviation 1.6 Total heat transfer rate, 33387 Btu/hr 9 Standard deviation 1.238 Heat transfer coefficienent 2, 8tu/hr ft² °F Standard deviation 0.4 Heat transfer coefficienent 2, 8tu/hr ft² °F Standard deviation 0.4 Heat transfer coefficienent 3, 8tu/hr ft² °F	temperature, °F Standard deviation 2 1 Wall coolant bottom 93 87 temperature, °F Standard deviation 2 3 Wall coolant total 82 76 temperature, °F Standard deviation 1 2 Wall coolant flow rate, 4.4 4.8 gal/min Standard deviation 0.1 0.3 Wall coolant outlet (b) (b) pressure, psia Standard deviation (b) (b) Coolant flow rate, gal/min (b) (b) Standard deviation (b) (b) Coolant flow rate, gal/min (b) (b) Standard deviation (b) (b) Coolant outlet pressure, 30.3 19.4 psia Standard deviation 0.1 6.3 Heat exchanger heat trans- fer rate, Btu/hr Standard deviation 2693 2527 Heat extractor heat trans- fer rate, Btu/hr Standard deviation (b) (b) Wall heat transfer rate, 17853 20103 Btu/hr Standard deviation 1803 2160 Heat transfer coeffici- ent 1, Btu/hr ft2 °F Standard deviation 1238 880 Heat transfer coeffici- ent 2, Btu/hr ft2 °F Standard deviation 0.4 0.5 Heat transfer coeffici- ent 2, Btu/hr ft2 °F Standard deviation 0.4 0.5 Heat transfer coeffici- ent 2, Btu/hr ft2 °F Standard deviation 0.4 0.5 Heat transfer coeffici- ent 3, Btu/hr ft2 °F	Wall coolant middle temperature, °F 78 74 (b) Standard deviation 2 1 (b) Wall coolant bottom 93 87 (b) temperature, °F Standard deviation 2 3 (b) Wall coolant total 82 76 76 temperature, °F Standard deviation 1 2 4 Wall coolant flow rate, gal/min 4.4 4.8 5.2 gal/min 5.2 3 (b) (b) (b) Standard deviation 0.1 0.3 0.3 0.3 Wall coolant outlet (b) (b)	Wall coolant middle temperature, °F 78 74 (b) 78 Standard deviation 2 1 (b) 2 Wall coolant bottom 93 87 (b) 84 temperature, °F Standard deviation 2 3 (b) 2 Wall coolant total temperature, °F 82 76 76 77 Standard deviation 1 2 4 2 Wall coolant flow rate, gal/min 4.4 4.8 5.2 5.4 gal/min Standard deviation 0.1 0.3 0.3 1.1 Wall coolant outlet (b) (b) (b) (b) (b) psia Standard deviation (b) (b)	Wall coolant middle temperature, °F 78 74 (b) 78 70 Standard deviation 2 1 (b) 84 87 Wall coolant bottom temperature, °F 8 (b) 84 87 Standard deviation 2 3 (b) 2 5 Wall coolant total total temperature, °F 82 76 76 77 78 temperature, °F Standard deviation 1 2 4 2 3 Wall coolant flow rate, gal/min 4.4 4.8 5.2 5.4 5.0 gal/min Standard deviation 0.1 0.3 0.3 1.1 1.0 Wall coolant outlet (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) (b) <	Wall coolant middle temperature, °F 78 74 (b) 78 70 75 Standard deviation 2 1 (b) 2 3 6 Wall coolant bottom temperature, °F 8 76 76 77 78 88 Standard deviation 1 2 3 (b) 2 5 4 Wall coolant total temperature, °F 8 76 76 77 78 88 temperature, °F 7 5 4 4 2 3 3 Wall coolant total temperature, °F 4.4 4.8 5.2 5.4 5.0 4.6 gal/min 5 4.4 4.8 5.2 5.4 5.0 4.6 gal/min 5 (b) (b)

b Data or results were not obtained.

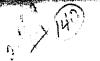


Table 4. - Continued

Data	Parameter				Te	st			
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	TB1H
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 78	(b) (b) (b) (b) 76	(b) (b) (b) (b) 77	(b) (b) (b) (b) 65	(b) (b) (b) (b) 64	(b) (b) (b) (b) 67	(b) (b) (b) (b) 74	(b) (b) (b) (b) 77
077 078	Standard deviation Coolant inlet pressure, psia	0 67.3	. 62.5	2 62.0	3 46.9	1 50.0	4 53.6	2 62 . 0	2 62 . 5
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.2 2.1 0 50.5	2.9 1.9 0.1 47.5	2.9 2.0 0.2 45.5	5.1 1.9 0.1 30.1	2.9 2.0 0.1 30.7	7.7 2.1 0.2 32.7	6.7 1.9 0.2 42.6	4.4 1.7 0.2 46.9
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.5 (b)	3.1 (b)	4.5 (b)	4.3 (b)	1.5 (b)	5.0 (b)	5.4 (b)	3.5 (b)
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b) 126	(b) 128	(b) 129	(b) 116	(b) 111	(b) 113	(b) 126	(b) 121
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	1 (b)	3 (b)	6 (b)	3 (b)	3 (b)	3 (b)	5 (b)	10 (b)
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) 126	(b) 128	(b) 128	(b) 117	(b) 109	(b) 110	(b) 120	(b) 122
088 089	Standard deviation Outlet 9 coolant temperature, °F	1 (b)	2 (b)	3 (b)	3 (b)	3 (b)	3 (b)	5 (b)	9 (b)
089	Standard deviation	(b)							

en engli i si sejesia pi coscili (S	ture, F	/ ny	ייירעטן	(n)	(n)	(n)	(n)	(n)	(n)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F			4. 3	4. \		4	/. \	/ L N
090	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(D)	(D)	(D)	(D)	(0)
091	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Outlet 12 coolant tempera	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
032	Outlet 12 coolant tempera- ture, F	(0)	(5)	(6)	(6)	(5)	(5)	(5)	(5)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	131	129	127	128	118	119	126	128
094	Standard deviation	1	3	3	4	3	4	5	11
095	Outlet 15 coolant tempera- ture, F	(p)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Outlet 16 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Standard deviation	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	(b)	(þ)	(b)	(b)	(b)	(b)	(b)	(p)
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
097	Coolant flow rate, gal/min	24.3	22.8	23.6	22.5	24.1	24.9	23.9	22.0
097	Standard deviation	0.3 90	1.1 89	2.0 89	1.5 80	1.0 77	2.3 80	2 . 7 87	1.5 89
098	Coolant outlet tempera- ture, °F								
098	Standard deviation	0	1	1	2	1	3	2	2
101	Coolant flow rate, gal/min	2.1	1.9	1.9	2.0	2.1	2.2	2.1	2.0
101	Standard deviation	0 57.6	0.1	0.3	0.1	0.1 39.4	0.2 42.2	0.2 51.7	0.2 52.7
102	Coolant outlet pressure,	57.6	51.3	51.1	37.9				
102	Standard deviation	0.1	3.9	3.9	4.5	2.4	6.5	5.6	3.8
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.



Table 4. - Continued

Data chan-	Parameter				Te	est			
nel	-	TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	TB1H
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera-	(b)	(b) (b)						
106 107	ture, °F Standard deviation Outlet 21 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
107 108	ture, °F Standard deviation Outlet 22 coolant tempera-	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
108 109	ture, °F Standard deviation Outlet 23 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
109 110	ture, °F Standard deviation Outlet 24 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
110 111	ture, °F Standard deviation Outlet 25 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
111 112	ture, F Standard deviation Outlet 26 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
112 113 113	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 10.7 0	(b) 11.6 0.7	(b) 11.5 0.7	(b) 10.0 0.7	(b) 10.8 0.5	(b) 11.1 1.1	(b) 10.9 1.2	(b) 9.8 0.6
114	Coolant outlet tempera- ture, °F	77	75	77	65	64	67	74	77
114 115	Standard deviation Wall coolant top tempera- ture, °F	0 98	1 102	2 105	3 93	1 91	4 100	2 107	2 105
115 116	Standard deviation Wall coolant middle	1 79	2 75	4 76	7 72	3 66	8 70	7 80	9 85
116 117	temperature, °F Standard deviation Wall coolant bottom	1 86	2 84	5 86	4 72	2 71	7 75	6 82	6 89
117	temperature, °F Standard deviation	0	1	2	5	1	3	2	3

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115	Standard deviation	T	2	4	7	3	8	And in the same of the Asia	19
116	Wall coolant middle	79	75	76	72	66	70	80	85
	temperature, °F			. •	, _		.0	00	00
116	Standard deviation	1	2	5	4	2	7	6	6
117	Wall coolant bottom	86	84	86	72	71	75	82	89
	temperature, °F				. –				
117	Standard deviation	0	1	2	5	1	3	2	3
120	Wall coolant total	85	83	83	80	76	78	84	89
	temperature, °F				00	70	, 0	0.	0,
120	Standard deviation	0	1	1	3	1	3	2	3
121	Wall coolant flow rate.	6.6	7.2	7.2	5.2	5.6	5.8	5.6	4.9
	gal/min		, , , _	,	0.2	0. 0	0. 0	0.0	
121	Standard deviation	0	0.4	0.4	0.4	0.3	0.6	0.6	0.3
140	Wall coolant outlet	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	pressure, psia	(-/	(-)	(-)	(-)	(2)	(2)	(5)	(5)
140	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	30.7	18.6	19.0	16.3	14.9	15.5	26.3	30.3
	psia								
145	Standard deviation	0.1	7.4	7.7	4.2	0.1	3.7	7.1	3.1
C26	Heat exchanger heat trans-	148090	143060	142010	168630	158530	154150	152700	133920
	fer rate, Btu/hr								
C26	Standard deviation	5687	7047	6968	5779	5615	6973	7109	28696
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	fer rate, Btu/hr			\ - /	(- /	(-,	(-)	(-,	(-,
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	25138	23548	21094	38433	32250	30397	28465	28797
	Btu/hr								
C28	Standard deviation	1133	5470	6104	8336	5335	5684	6658	8538
C30-1	Heat transfer coeffici-	48.0	47.8	48.0	51.0	49.5	50.8	54.3	48.8
	ent 1, Btu/hr ft ² °F								
C30-1	Standard deviation	1.2	0.8	2.8	0.9	0.7	0.8	1.5	9.7
C58	Total heat transfer rate,	244400	267450	268670	344180	324280	307810	313700	267830
	Btu/hr								
C58	Standard deviation	26001	28974	22682	29721	17724	30298	17494	66779
C30-2	Heat transfer coeffici-	61.4	61.7	60.5	48.4	45.0	44.6	45.1	5.5
	ent 2, Btu/hr ft ² °F								
C30-2	Standard deviation	1.4	1.0	1.6	1.2	1.0	0.8	1.2	0.6
C30-3	Heat transfer coeffici-	66.8	62.0	59.3	60.0	55.1	55.2	52.6	59.9
	ent 3, Btu/hr ft ² °F								
C30-3	Standard deviation	1.2	1.7	1.6	1.8	0.6	1.0	1.8	6.3

^b Data or results were not obtained.

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Table 4. - Continued

(f) Continued. Coolant system data

	(1) 00110	mucu. o	00141.0 5	, , , , , , , , , , , , , , , , , , ,				
Data chan-	Parameter				Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
051	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
077	Coolant inlet temperature,	77	78	79	74	78	76	80
077	Standard deviation	1	2	3	2	3	1	1
078	Coolant inlet pressure, psia	65.7	65.1	62.5	66.5	62.4	59.5	66.1
078	Standard deviation	0.6	5.9	2.0	2.8	2.7	1.1	1.0
079	Coolant flow rate, gal/min	2.0	0.9	0.9	0.9	0.8	1.1	1.3
079	Standard deviation	0.1	0.1	0	0	0	0	0
080	Coolant outlet pressure,	48.5	58.2	56.2	60.8	56.8	45.0	49.0
	psia							
080	Standard deviation	0.5	4.6	1.9	2.6	2.9	0.6	0.4
081	Outlet 1 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
081	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
082	Outlet 2 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
082	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
083	Outlet 3 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
083	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
084	Outlet A coolant tempera	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	Outlet 4 coolant tempera- ture, °F	•						
084	Standard deviation	(b)	(b)	(b)	(p)	(b)	(b)	(b)
085	Outlet 5 coolant tempera- ture, °F	132	78	79	74	79	80	83
085	Standard deviation	4	2	3	2	3	2	1
086		(b)	(b)	(b)	(b)	(b)	(b)	(b)
	Outlet 6 coolant tempera- ture, °F							
086	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
087	Outlet 7 coolant tempera- ture, °F	(b)	(b)	(p)	(b)	(b)	(b)	(b)
087	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
088	Outlet 8 coolant tempera-	132	78	79	`75	`79	`81	`87
000	ture, °F		, 0					
088	Standard deviation	9	3	3	2	3	2	1
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	Outlet 9 coolant tempera- ture, °F					_		
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

087	Outlet 7 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
087 088	Standard deviation Outlet 8 coolant tempera-	(b) 132	(b) 78	(b) 79	(b) 75	(b) 79	(b) 81	(b) 87
088 089	ture, °F Standard deviation Outlet 9 coolant tempera- ture, °F	9 (b)	3 (b)	3 (b)	2 (b)	3 (b)	2 (b)	1 (b)
089 090	Standard deviation Outlet 10 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)
090 091	Standard deviation Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
091 092	Standard deviation Outlet 12 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
092 093	Standard deviation Outlet 13 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
093 094	Standard deviation Outlet 14 coolant tempera- ture, °F	(b) 137	(b) 78	(b) 79	(b) 74	(b) 79	(b) 82	(b) 85
094 095	Standard deviation Outlet 15 coolant tempera-	3 (b)	2 (b)	3 (b)	2 (b)	3 (b)	2 (b)	1 (b)
	Standard deviation Outlet 15 coolant tempera- ture, F Standard deviation Outlet 16 coolant tempera-							
095 095	Standard deviation Outlet 15 coolant temperature, °F Standard deviation Outlet 16 coolant temperature, °F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
095 096 096 096 096 096 097 097	Standard deviation Outlet 15 coolant temperature, F Standard deviation Outlet 16 coolant temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	(b) (b) (b) (b) (b) (b) 22.8 0.3	(b) (b) (b) (b) (b) (b) 12.2 0.9	(b) (b) (b) (b) (b) (b) 11.7 0.4	(b) (b) (b) (b) (b) 12.4 0.4	(b) (b) (b) (b) (b) (b) 12.0 0.4	(b) (b) (b) (b) (b) 8.4 0.2	(b) (b) (b) (b) (b) (b) 9.3 0.1
095 096 096 096 096 097 097 098 098 101 101	Standard deviation Outlet 15 coolant temperature, F Standard deviation Outlet 16 coolant temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet temperature, F Standard deviation Coolant flow rate, gal/min Standard deviation	(b) (b) (b) (b) (22.8 0.3 91 2 2.1 0.2	(b) (b) (b) (b) (b) 12.2 0.9 78	(b) (b) (b) (b) (b) 11.7 0.4 79	(b) (b) (b) (b) (b) 12.4 0.4 75	(b) (b) (b) (b) (b) 12.0 0.4 79	(b) (b) (b) (b) (b) 8.4 0.2 77	(b) (b) (b) (b) (b) (b) 9.3 0.1 81

b Data or results were not obtained.

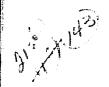


Table 4. - Continued

(f) Cor	ntinued.	Coo	lant	system	data
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Data	Parameter				Test			
chan- nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
112 113 113	Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 10.7 0.2	(b) 10.5 0.8	(b) 10.2 0.4	(b) 10.5 0.4	(b) 9.9 0.4	(b) 12.2 2.1	(b) 12.7 0.1
114	Coolant outlet tempera- ture, °F	77	78	79	74	79	78	81
114 115	Standard deviation Wall coolant top tempera- ture, F	1 113	3 112	3 120	3 109	3 (b)	1 103	1 124
115 116	Standard deviation Wall coolant middle temperature, °F	5 86	4 83	5 89	7 81	(b) (b)	9 87	6 96
116 117	Standard deviation Wall coolant bottom temperature, °F	5 89	3 90	4 91	3 82	(b) (b)	4 103	3 104
117 	temperature, r Standard deviation Wall coolant total	2 86	3 Q2	2 91	3	(b) Q 5	4 104	2 107

115	Wall coolant top tempera- ture, °F	113	112	120	109	(p)	103	12
115 116	Standard deviation Wall coolant middle temperature, °F	5 86	4 83	5 89	7 81	(b) (b)	9 87	9
116 117	Standard deviation Wall coolant bottom temperature, °F	5 89	3 90	4 91	3 82	(b) (b)	4 103	10
117 120	Standard deviation Wall coolant total temperature, °F	2 86	3 92	2 91	3 91	(b) 95	4 104	10
120 121	Standard deviation Wall coolant flow rate, gal/min	0 5.6	3 4.6	3 4.4	4 3.7	4 3.2	3 3.3	3.
121 140	Standard deviation Wall coolant outlet pressure, psia	(b)	0.3 (b)	0.2 (b)	0.5 (b)	0.1 (b)	0 (b)	0.: (b
140 141 141 145	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	(b) (b) (b) 29.7	(b) (b) (b) 30.1	(b) (b) (b) 30.1	(b) (b) (b) 29.9	(b) (b) (b) 28.3	(b) (b) (b) 30.2	(b (b (b 30.
145 C26	psia Standard deviation Heat exchanger heat trans-	0.2 165870	1.4 5531	1.3 5600	0.7 4746	3.6 4423	0.3 10604	1133
C26 C27	fer rate, Btu/hr Standard deviation Heat extractor heat trans- fer rate, Btu/hr	13750 (b)	2351 (b)	2276 (b)	1108 (b)	1113 (b)	622 (b)	79 [,] (b
C27 C28	Standard deviation Wall heat transfer rate, Btu/hr	(b) 27121	(b) 31881	(b) 26979	(b) 30170	(b) 27016	(b) 45344	(b 4689
C28 C30-1	Standard deviation Heat transfer coeffici- ent 1, Btu/hr ft ² °F	2675 54.7	3520 (b)	2881 (b)	6356 (b)	1995 (b)	4214 (b)	315 (b
C30-1 C58	Standard deviation Total heat transfer rate, Btu/hr	3.3 315560	(b) 176650	(b) 163020	(b) 144460	(b) 136910	(b) 176770	(b 179050
C58 C30-2	Standard deviation Heat transfer coeffici- ent 2, Btu/hr ft ² °F	8902 44.9	8692 (b)	6984 (b)	24226 (b)	11545 (b)	12565 (b)	1189 (b
C30-2 C30-3	Standard deviation Heat transfer coeffici- ent 3, Btu/hr ft ² °F	8.3 61.9	(b) (b)	(b) (b)	(b)	(b)	(b)	(b
C30-3	Standard deviation	3.4	(b)	(b)	(b)	(b)	(b)	(b

b Data or results were not obtained.

J. W. Mark

Table 4. - Continued

Data	Parameter Test								
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
051	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
077	Coolant inlet temperature,	65	65	66	67	67	67	67	64
077 078	Standard deviation Coolant inlet pressure, psia	0 70.6	0 67.8	0 70.3	0 70.6	0 71.1	0 72.1	0 66.9	0 57 . 6
078	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.1	5.9	0.1	0.2	0.2	0.3	6.8	0.2
079		2.6	2.4	2.5	2.6	2.6	2.6	2.5	2.4
079		0	0.2	0	0	0	0	0.1	0
080		25.0	26.1	25.8	23.1	22.6	23.3	24.8	27.9
080	psia Standard deviation Outlet 1 coolant tempera- ture, °F	1.0	0.4	0.1	0.8	0.4	0.1	1.5	0.4
081		120	117	121	119	118	111	120	120
081	Standard deviation Outlet 2 coolant tempera- ture, °F	1	4	2	2	1	1	4	5
082		108	1.04	109	106	106	101	109	114
082	Standard deviation Outlet 3 coolant tempera- ture, °F	1	4	2	2	1	1	2	2
083		91	93	93	90	90	87	94	96
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	2 (b)	(b)	(b)	1 (b)	1 (b)	1 (b)	4 (b)	(b)
084	Standard deviation Outlet 5 coolant tempera- ture, F	(b)	(b)	(b)	(L)	(b)	(b)	(b)	(b)
085		110	110	110	107	106	98	107	105
085	Standard deviation Outlet 6 coolant temperature, °F	2	4	0	2	1	2	4	3
086		122	117	119	119	121	116	127	116
086	Standard deviation Outlet 7 coolant tempera- ture, F	2	4	1	1	2	1	5	6
087		119	120	120	118	118	112	122	118
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	2 (b)	5 (b)	1 (b)	1 (b)	(b)	2 (b)	5 (b)	4 (b)
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)

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b Data or results were not obtained.

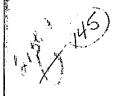


Table 4. - Continued

Data	Parameter				T	est			
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
107	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	Outlet 23 coolant tempera- ture, F	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Outlet 26 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
113	Coolant flow rate, gal/min	11.8	11.8	12.5	13.1	13.3	11.7	12.2	10.5
113 114	Standard deviation	0 . 2 83	0.6 83	0.3 83	0.2 83	0.3 83	0.7 83	1.0 84	0 84
114	Coolant outlet tempera- ture, °F	03	03	00	03	03	00	04	
114	Standard deviation	0	0	0	0	0	0	1	0
115	Wall coolant top tempera- ture, °F	77	89	88	85	80	76	71	80
115	Standard deviation	1	3	2	2	2	3	1	3
116	Wall coolant middle	62	69	63	63	60	59	61	64
116	temperature, °F Standard deviation	3	7	2	6	5	3	3	4
116 117	Wall coolant bottom	83	, 84	2 84	84	84	83	86	85
	temperature, °F								
117	Standard deviation	1	2	1	0	0	1	2	2
	Wall coolant total	74		75	7.6	75	74	76	74

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115	Standard deviation	1	3	2	2	2	3	1	. 3
116	Wall coolant middle	62	69	63	63	60	59	61	64
	temperature, °F								
116	Standard deviation	3	7	2	6	5	3	3	4
117	Wall coolant bottom	83	84	84	84	84	83	86	85
	temperature, °F								
117	Standard deviation	1	2	1	0	0	1	. 2	2
120	Wall coolant total	74	75	75	76	75	74	76	74
	temperature, °F		, ,		, 0	, ,	, ,		• •
120	Standard deviation	1	1	1	0	1	0	1	1
121	Wall coolant flow rate,	4.4	4.2	4.3	4.1	4.2	4.4	4.1	3.3
	gal/min								
121	Standard deviation	0.1	0.4	0.1	0	0	0.1	0.5	0
140	Wall coolant outlet	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1.0	pressure, psia	(5)	(2)	(5)	(2)	(~)	(-)	(-/	(-/
140	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Coolant flow rate, gal/min	(b)	(b)	(́ь)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1 / 5	psia	(h)	(5)	(5)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)			233990	261370	261720
C26	Heat exchanger heat trans-	280170	256890	271550	266860	266890	233990	2013/0	201720
006	fer rate, Btu/hr	6276	2000	0700	7071	cocc	10510	E226	7150
C26	Standard deviation	6376	2892	2789	7071	6866 (b)	10518	5226 (b)	7153 (b)
C27	Heat extractor heat trans-	(b)	(b)	(p)	(b)	(b)	(b)	(1)	(n)
C27	fer rate, Btu/hr Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	20211	19866	19076	18251	16953	15740	17967	16156
020	Btu/hr	20211	13000	13070	10201	10300	207 10	1,30,	20200
C28	Standard deviation	2024	391	1294	1084	1744	590	1962	1532
C30-1	Heat transfer coeffici-	63.2	60.5	62.1	60.8	61.6	58.4	63.5	61.9
030-1	ent 1, Btu/hr ft ² °F	00.2	00.0	02.1	00.0	01.0	• • • • • • • • • • • • • • • • • • • •	••••	~_·•
C30-1	Standard deviation	0.6	0.6	1.9	1.2	0.7	0.6	3.3	4.2
C58	Total heat transfer rate,	309540	309740	303210	295330	295570	278070	454530	305370
	Btu/hr								
C58	Standard deviation	6739	3078	4205	6411	6903	55583	54537	50816
C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	64.0	59.5	63.4	59.7	62.4	59.4	64.9	72.3
C30-2	Standard deviation	1.1	0.6	2.7	1.7	0.7	0.9	1.3	2.4
C30-3	Heat transfer coeffici-	60.2	58.8	58.4	56.3	59.6	59.6	60.8	60.7
	ent 3, Btu/hr ft ² °F								
C30-3	Standard deviation	0.9	0.3	1.9	0.7	0.9	0.8	0.7	0.6

b Data or results were not obtained.

Table 4. - Continued

Data	Parameter	Test										
chan- nel		E19	E13A	E13B	E14	E11	E12	E15				
051	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
051	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
052	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
077	Coolant inlet temperature,	65	65	65	66	66	66	66				
077 078	Standard deviation Coolant inlet pressure, psia	0 65 . 5	0 74.5	0 74 . 6	0 74.8	0 74.9	0 75 . 0	0 77.1				
078	Standard deviation	7.5	0.2	0.1	0.2	0.3	0.2	0.4				
079	Coolant flow rate, gal/min	2.8	3.1	3.1	3.1	3.1	3.1	3.1				
079	Standard deviation	0.3	0	0	0	0	0	0				
080	Coolant outlet pressure,	26.4	26.0	26.1	26.1	26.0	26.2	26.3				
080	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.7	0	0	0.1	0.1	0	0.2				
081		117	116	115	116	106	105	103				
081	Standard deviation Outlet 2 coolant tempera- ture, °F	5	1	1	1	1	1	2				
082		112	111	109	110	101	101	101				
082	Standard deviation Outlet 3 coolant tempera- ture, °F	5	1	1	1	1	1	2				
083		95	93	93	93	89	83	82				
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	4 (b)	1 (b)	1 (b)	1 (b)	(b)	0 (b)	2 (b)				
084	Standard deviation Outlet 5 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	, (b)				
085		109	106	104	103	102	88	88				
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b)	1 (b)	1 (b)	1 (b)	(p)	1 (b)	2 (b)				
086	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)				
087		121	119	117	118	116	101	99				
087	Standard deviation Outlet 8 coolant tempera- ture, °F	5	1	1	1	5	1	2				
088		(b)	(b)	(b)	(b)	(b)	(b)	(b)				
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)				

	ture, °F							
087	Standard deviation	5	1	1	1	5	1	2
880	Outlet 8 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000	ture, °F	71.3	71.	/ - \	/ L \	/ - \	/ ե \	/ L \
880	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	ture, F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
030	ture, F	(0)	(5)	(6)	(5)	(5)	(5)	(5)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Outlet 11 coolant tempera-	(b)	(\tilde{b})	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	ture, °F	•						
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12_coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
002	ture, F	(6)	(6)	(b)	(b)	(6)	(b)	(b)
092 093	Standard deviation Outlet 13 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
093	ture, °F	(5)	(5)	(6)	(5)	(5)	(5)	(5)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
05.	ture, °F	(-)	(-/	(-7	()	(- /	, ,	` ,
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F		4. 3			(1.)	/	/ 1 \
095	Standard deviation	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
096	Outlet 16 coolant tempera- ture, °F	(b)	(b)	(b)	(a)	(0)	(0)	(n)
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	1.6	(b)	(b)	(b)	(b)	(b)	(b)
096	Standard deviation	0.2	(b)	(b)	(b)	(b)	(b)	(b)
097	Coolant flow rate, gal/min	9.4	10.5	10.5	10.5	10.0	10.5	10.6
097	Standard deviation	1.0	0	0	0	0.2	0	0.1
098	Coolant outlet tempera-	91	90	90	90	86	84	84
	ture, °F	0	1	0		1	0	1
098	Standard deviation	2	1	0	1	1 3.8	0 3.6	1 0
101	Coolant flow rate, gal/min	4.0 0.4	4.6 0	4.7 0	4.6 0	0.1	0.1	0
101 102	Standard deviation Coolant outlet pressure,	34.7	33.4	33.3	33.6	44.2	47.3	49.4
102	°F	JT.1	33.4	33.3	55.0	7.1.0 (17.0	13.1
102	Standard deviation	2.7	0.2	0.1	0.3	1.3	1.2	1.4
103	Outlet 17 coolant tempera-	119	116	115	115	114	114	115
-	ture, °F							
103	Standard deviation	4	1	1	1	0	0	0

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

J. M. Hall

Table 4. - Continued

Data	Parameter				Test			
chan- nel		E19	E13A	E13B	E14	E11	E12	E15
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)
112 113 113	Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 11.8 1.0	(b) 13.7 0	(b) 13.7 0.1	(b) 13.7 0	(b) 11.7 0.3	(b) 11.0 0.2	(b) 11.0 0.4
114	Coolant outlet tempera- ture, °F	81	79 -	79	79	79	79	80
114 115	Standard deviation Wall coolant top tempera- ture, °F	2 80	1 75	0 81	1 82	0 76	1 73	1 78
115 116	Standard deviation Wall coolant middle temperature, °F	4 75	3 57	1 65	1 64	1 61	1 62	1 67
116 117	Standard deviation Wall coolant bottom	13 88	2 88	2 91	2 92	1 88	3 86	3 87
117	temperature, °F Standard deviation	2 71	1 7 4	0 7 4	1	1	1 ************************************	1 1000.000.000.000.000.000.000.000.000.0

	140	mail coolant outlet	18.3	18.8	18.7	18.5
	140	pressure, psia Standard deviation	1.1	0.1	0.1	0.2
	141	Coolant flow rate, gal/min	(b)	(b)		
	141	Standard deviation	(b)	(b)		
	145	Coolant outlet pressure, psia	(b)	(b)	(b)	(b)
	145	Standard deviation	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans- fer rate, Btu/hr			221600	
	C26	Standard deviation	8455	6226	4335	9021
	C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)
بسبو	C27	Standard deviation	(b)	(b)	(b)	(b)
JOT70	C28	Wall heat transfer rate, Btu/hr	10493	10553		10914
Š	C28		2240	1140	8835	2726
FOLLOUT: FRAME	C30-1	ent 1, Btu/hr ft ² °F	64.8		66.2	67.1
R	C30-1		0.9	0.8	1.4	1.2
A	C58	Total heat transfer rate, Btu/hr	273560	282680	277360	
	C58	Standard deviation	61479	6705	3859	7124
۲	C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	76.6			
•	C30-2	Standard deviation	2.2	1.3	2.1	1.6
	C30-3	Heat transfer coeffici- ent 3, Btu/hr ft ² °F	0.3			
	C30-3		0	(b)	(b)	(b)

13

88

2

71

1

3.4

0.4

18.3

2

88

1

71

3.8

0.1

18.8

2

91

0

74

5

0

3.8

18.7

2

88

70

3.8

0

18.3

0.1

(b)

(b)

(b)

(b)

180080

4390

(b)

(b)

9039

994

59.9

0.9

5322

69.1

0.9

(b)

(b)

229070

86

1

70

1

0

18.6

0.2

(b)

(b)

(b)

(b)

5941

(b)

(b)

7496

1318

57.6

0.8

5612

68.2

1.5

(b)

(b)

207290

169190 173650

3.8

92

1

71

1

3.8

18.5

3

87

1

71

1

0

3.8

18.0

0.1

(b)

(b)

(b)

(b)

6362

(b)

(b)

9931

1039

55.8

1.6

213570

5748

68.2

2.7

(b)

(b)

116

117

117

120

120

121

121

140

Standard deviation

temperature, °F Standard deviation

Wall coolant total

Standard deviation

Standard deviation

Wall coolant outlet

gal/min

temperature, °F

Wall coolant flow rate,

Wall coolant bottom

b Data or results were not obtained.

45,27,48

Table 4. - Continued

Data	Parameter					Test				
chan- nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 67	(b) (b) (b) (b) 67	(b) (b) (b) (b) 68	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 67	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 68
077 078	°F Standard deviation Coolant inlet pressure,	0 74.1	0 73.7	0 73.9	0 73.1	0 72 . 9	0 77.3	0 72.4	0 73.1	0 74.4
078 079 079 080	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.4 3.1 0 26.4	0.4 3.0 0 26.6	2.3 3.0 0.1 28.7	1.9 3.0 0.1 27.9	0.4 3.0 0 27.1	11.8 3.1 0.3 28.1	0.3 3.2 0 27.4	0.4 3.2 0 26.8	0.5 3.2 0 26.6
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.3 107	0.1 104	5.0 108	3.7 109	0.1 110	2.6 105	0.2 93	0.1 96	0 98
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	1 102	0 98	2 100	1 101	1 99	3 92	3 76	1 93	1 92
082 083	Standard deviation Outlet 3 coolant tempera- ture, F	1 (b)	(p)	1 (b)	1 (b)	4 (b)	2 (b)	3 (b)	0 (b)	(b)
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) 122	(b) 115	(b) 124	(b) 125	(b) 119	(b) 112	(b) 96	(b) 107	(b) 99
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	10 107	1 104	1 95	1 99	6 102	3 103	4 106	1 103	0 101
087 088	Standard deviation Outlet 8 coolant tempera- ture, F	1 (b)	1 (b)	1 (b)	1 (b)	1 (b)	4 (b)	1 (b)	0 (b)	(b)
088 089	Standard deviation Outlet 9 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
		4. 1	4. 1	4. 1	A 2164.				and the later of	Marine Carlo Comment

1

2

3

1

3

0

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0

2

Standard deviation

103

b Data or results were not obtained.

Table 4. - Continued

	Data	Parameter			•		Test				
	chan- nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
	104	Outlet 18 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
	105 106	ture, °F Standard deviation Outlet 20 coolant tempera-	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
	106 107	ture, F Standard deviation Outlet 21 coolant tempera-	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
Ŧ.	107 108	ture, °F Standard deviation Outlet 22 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
FOL DOIN	108 109	ture, F Standard deviation Outlet 23 coolant tempera-	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
ביי ביים ביים ביים	109 110	ture, °F Standard deviation Outlet 24 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
	110 111	Standard deviation Outlet 25 coolant temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
	111 112	Standard deviation Outlet 26 coolant temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
	112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 12.2 0 84	(b) 12.0 0 85	(b) 11.8 0.4 84	(b) 11.8 0.3 84	(b) 11.9 0.1 85	(b) 13.2 1.2 84	(b) 7.7 0 67	(b) 7.8 0 69	(b) 8.0 0 69
	114 115	ture, °F Standard deviation Wall coolant top tempera- ture, °F	1 77	1 82	1 87	1 88	0 88	1 83	0 91	0 80	0 87
	115 116	Standard deviation Wall coolant middle temperature, °F	1 66	1 72	2 74	2 74	2 72	1 68	2 81	1 70	1 77
	116 117	Standard deviation Wall coolant bottom temperature, °F	2 89	1 91	2 92	2 91	1 93	1 90	2 89	1 90	1 88
	117 120	Standard deviation Wall coolant total	1 75	0 76	1 79	1 63	0 83	1 113	0 72	0 73	0 74

FOLDOUT FRAME

142.76	in Maria come constitutions	temperature, F									
	116	Standard deviation	2	1	2	2	1	1	2	1	1
	117	Wall coolant bottom temperature, °F	89	91	92	91	93	90	89	90	88
	117	Standard deviation	1	0	1	1	0	1	0	0	0
	120	Wall coolant total	75	76	7 <u>9</u>	63	83	113	72	73	74
		temperature, °F									
	120	Standard deviation	0	0	3	18	10	3	0	0	0
	121	Wall coolant flow rate, gal/min	4.0	4.2	3.9	4.1	4.2	4.2	3.8	3.7	4.0
	121	Standard deviation	0	0.1	0.2	0.2	0.1	0.3	0.1	0	0
	140	Wall coolant outlet	19.1	19.2	21.1	20.4	19.3	20.0	18.9	18.2	18.3
	140	pressure, psia Standard deviation	0	0	5.4	3.9	0	1.3	0.2	0	0
	141	Coolant flow rate, gal/min	1.2	1.3	1.7 0.1	1.6	1.5 0.1	1.4 0.2	1.3	1.4	1.5 0
	141 145	Standard deviation Coolant outlet pressure,	0 (b)	0.1 (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		psia	,	, ,					•		•
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans- fer rate, Btu/hr	272060	259210	251440	279740	287770	272540	158860	188440	192540
	C26	Standard deviation	9340	3935	2306	2925	7222	4995	12551	3264	1625
	C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C28	Wall heat transfer rate, Btu/hr	15692	18488	21705	24861	33321	95996	12338	10526	12631
	C28	Standard deviation	692	541	4382	8807	21058	11732	294	225	223
	C30-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	53.6	49.9	53.2	54.8	54.6	49.8	37.6	43.8	44.3
	C30-1	Standard deviation	0.9	0.4	1.4	0.6	2.2	0.4	3.9	0.5	0.4
	C58	Total heat transfer rate, Btu/hr	442480	493040	390900	409690	545860	732460	309200	325100	329310
	C58	Standard deviation	14366	4217	12892	138580	70685	49675	11590	5908	2346
	C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	61.0	54.9	56.3	58.4	53.6	43.5	18.9	50.8	46.4
	C30-2	Standard deviation	1.1	0.5	2.0	0.6	7.6	0.4	4.7	0.6	0.3
	C30-3	Heat transfer coeffici- ent 3, Btu/hr ft ² °F	60.7	57.7	55.3	60.2	65.6	63.6	(b)	(b)	(b)
	C30-3	Standard deviation	20	0.9	1.1	0.6	3.3	0.6	(b)	(b)	(b)

b Data or results were not obtained.

11/2/60

Table 4. - Continued

(f) Continued. Coolant system data

	Data	Parameter				Tes	st			
	chan- nel		F19	F16	F27	G2	G3	G6	G1	G5
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 68	(b) (b) (b) (b) 67	(b) (b) (b) (b) 65	(b) (b) (b) (b) 66	(b) (b) (b) (b)	(b) (b) (b) (b) 65	(b) (b) (b) (b) 66	(b) (b) (b) (b)
	077 078	Standard deviation Coolant inlet pressure, psia	0 74.6	0 68.5	0 62.4	72.0	0 76.7	3 71.2	0 78 . 9	0 75.1
	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.6 3.2 0 27.1	7.1 2.9 0.3 27.4	5.5 2.6 0.2 28.1	7.2 (b) (b) 22.6	0.4 (b) (b) 23.5	7.1 (b) (b) 32.1	2.7 (b) (b) 24.8	6.6 (b) (b) 25.5
FOLD	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.2 102	0.2 105	0.1 107	1.5 65	0 64	8 . 1 60	4.9 61	4.5 65
FOLDOUT FRAME	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	0 99	4 101	3 95	0 66	0 65	2 61	0 62	3 66
RAME	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	0 107	4 111	2 111	0 66	0 65	2 62	0 62	3 66
_	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	1 (b)	4 (b)	3 (b)	0 (b)	0 (b)	2 (b)	(p)	(b)
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) 105	(b) 109	(b) 111	(b) 67	(b) 68	(b) 67	(b) 68	(b) 69
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	1 108	3 114	3 118	0 65	0 61	3 58	0 56	1 63
	087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	1 (b)	5 (b)	4 (b)	2 (b)	1 (b)	1 (b)	1 (b)	5 (b)
	088 089	Standard deviation Outlet 9 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)

	and initialities with Author Latternation and the second		J .	3	U	U	9	V	-
087	Outlet 7 coolant tempera-	108	114	118	65	61	58	56	63
087	ture, F Standard deviation	1	5	4	2	1	1	1	5
088	Outlet 8 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000	ture, °F	(-)	(-/	(-/	(-,	\ ,	` '	` ,	` '
880	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	ture, r	(b)	/ b.)	/ b.)	(b.)	(5)	(b)	(b)	(6)
089	Standard deviation Outlet 10 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
030	ture, F	(5)	(5)	(0)	(1)	(5)	(5)	(6)	(5)
090	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
001	ture, °F	/ L \	/ b.\	(b.)	/b)	(b.)	(b)	(b)	(b)
091 092	Standard deviation Outlet 12_coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	ture, F		(5)	(5)					
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera-	(b)	(b)	(b)	(b)	(b) -	(b)	(b)	(b)
093	ture, F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 14 coolant tempera—	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
051	ture, °F	(2)	(2)	(-)	(-,	(-/	(-)	(-)	(/
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15_coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	ture, F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 16 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000	ture, °F		(-,				. ,		
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
096	Coolant flow rate, gal/min	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
096 097	Standard deviation Coolant flow rate, gal/min	(b) 13.5	(b) 12.3	(b) 11.0	(b) 2.7	(b) 2.8	(b) 2.4	(b) 2.8	2.7
097	Standard deviation	0	1.2	0.9	0.2	0	0.4	0.1	0.2
098	Coolant outlet tempera-	101	105	105	67	68	67	68	69
	ture, °F	_	_	_		_	•	•	•
098	Standard deviation	0	3	3	0	()	3 / 5 \	()	(h)
101 101	Coolant flow rate, gal/min Standard deviation	2.7 0	2.4 0.3	2.2 0.2	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
101	Coolant outlet pressure,	39.2	38.2	37.5	38.5	40.4	45.2	42.0	41.6
102	°F	03.2	0012	07.0	00.0	,,,,	.012		.200
102	Standard deviation	0.2	1.3	1.1	1.6	0	5.3	4.3	4.3
103	Outlet 17 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
102	Scandard devide 1011	(0)	(n)	(0)	(0)	(0)	(0)	(n)	(0)

 $^{^{\}rm b}$ Data or results were not obtained.



Table 4. - Continued

F19 F16 F27 G2 G3 G6 G1 G5	Data	Parameter				Test	t			
ture, °F 104 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) 105 Outlet 19 coolant tempera— (b) ture, °F 105 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) 106 Outlet 20 coolant tempera— (b) 107 Standard deviation (b)	chan- nel		F19	F16	F27	G2	G3	G6	G1	G5
104 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) (b)	104	Outlet 18 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
ture, F 105 Standard deviation (b)		Standard deviation								
105 Standard deviation (b)	105	Outlet 19 coolant tempera- ture. °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
ture, F 106 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) 107 Outlet 21 coolant tempera- 108 Standard deviation (b)		Standard deviation							(b)	(b)
106 Standard deviation (b)	106		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
ture, °F 107 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) 108 Outlet 22 coolant tempera— (b)		Standard deviation								
107 Standard deviation (b)	107		(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
ture, °F 108 Standard deviation (b)	107	Standard deviation	(b)							
108 Standard deviation (b)	108		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	108		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109 Standard deviation (b)		Outlet 23 coolant tempera-								
ture, °F 110 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) 111 Outlet 25 coolant tempera- (b)	109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
110 Standard deviation (b)	110	Outlet 24 coolant tempera- ture. °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111 Standard deviation (b)		Standard deviation		(b)	(b)					
111 Standard deviation (b)	111	Outlet 25 coolant tempera- ture, °F		(b)	(b)	(b)		•		
ture, °F 112 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) 113 Coolant flow rate, gal/min 7.9 7.3 6.6 7.6 7.9 6.6 8.3 7.9 113 Standard deviation 0 0.7 0.5 0.7 0 1.3 0.2 0.6 114 Coolant outlet tempera— 69 69 67 67 68 66 67 69 ture, °F 114 Standard deviation 0 0 0 1 0 3 0 0 115 Wall coolant top tempera— 91 92 92 83 84 76 79 86 ture, °F 115 Standard deviation 1 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F		Standard deviation			(b)					
112 Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) 113 Coolant flow rate, gal/min 7.9 7.3 6.6 7.6 7.9 6.6 8.3 7.9 113 Standard deviation 0 0.7 0.5 0.7 0 1.3 0.2 0.6 114 Coolant outlet tempera— 69 69 67 67 68 66 67 69 ture, °F 114 Standard deviation 0 0 0 1 0 3 0 0 115 Wall coolant top tempera— 91 92 92 83 84 76 79 86 ture, °F 115 Standard deviation 1 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F		ture, °F		•						
113 Standard deviation 0 0.7 0.5 0.7 0 1.3 0.2 0.6 114 Coolant outlet tempera— 69 69 67 67 68 66 67 69 ture, F 114 Standard deviation 0 0 0 1 0 3 0 0 115 Wall coolant top tempera— 91 92 92 83 84 76 79 86 ture, F 115 Standard deviation 1 0 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, F		Standard deviation		(b)						
114 Coolant outlet tempera— 69 69 67 67 68 66 67 69 ture, °F 114 Standard deviation 0 0 0 1 0 3 0 0 115 Wall coolant top tempera— 91 92 92 83 84 76 79 86 ture, °F 115 Standard deviation 1 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F										
114 Standard deviation 0 0 0 1 0 3 0 0 1 1 1 0 3 1 0 0 1 1 1 0 1 1 1 0 1 1 1 0 1 1 1 0 1		Coolant outlet tempera-								
115 Wall coolant top tempera- 91 92 92 83 84 76 79 86 ture, °F 115 Standard deviation 1 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F	114	Standard deviation	0	0	0	1	0			
115 Standard deviation 1 0 0 4 3 2 1 3 116 Wall coolant middle 79 79 82 111 97 69 84 110 temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F		Wall coolant top tempera-				83	84	76	79	86
temperature, °F 116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F		Standard deviation		-	-				-	
116 Standard deviation 2 3 6 31 18 6 9 32 117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F	116		79	79	82	111	, 97	69	84	110
117 Wall coolant bottom 89 91 93 94 93 98 94 102 temperature, °F	116		2	3	6	31	18	6	9	32
temperature, the second deviation of the second deviat		Wall coolant bottom			93			98	94	102
	adender 12.1 d'Anne	temperature, F			1	2	Ο	5	2	3

Milky admin contamination of	4 4 6	cemperature, r	_	_	_			_	٠.	
	116	Standard deviation	2	3	6	31	18	6	9	32
	117	Wall coolant bottom	89	91	93	94	93	98	94	102
		temperature, °F	_							
	117	Standard deviation	0	2	1	2	0	5	2	3
	120	Wall coolant total	74	75	74	76	77	77	76	81
		temperature, °F								
	120	Standard deviation	0	1	0	1	0	2	1	2
	121	Wall coolant flow rate,	4.1	3.9	3.3	3.9	4.2	3.5	3.9	3.8
		gal/min								
	121	Standard deviation	0.1	0.5	0.3	0.4	0.1	0.8	0.2	0.3
	140	Wall coolant outlet	18.9	20.5	22.4	18.5	19.1	29.5	20.3	21.4
		pressure, psia					_			4 7
	140	Standard deviation	0.2	1.6	1.0	2.3	0	9.3	5.1	4.7
	141	Coolant flow rate, gal/min	1.5	1.4	1.2	(p)	(b)	(p)	(b)	·(b)
	141	Standard deviation	(1.)	0.1	0.1	(b)	(b)	(b)	(b)	(b)
	145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		psia		4. 3		4.5	4.5		1. \	4. 3
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans-	228550	231470	224830	7843	6594	6217	6353	8468
		fer rate, Btu/hr								
	C26	Standard deviation	2332	2923	3336	782	455	1211	475	1252
	C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		fer rate, Btu/hr				4.5	4.3	/. \	/	/ 1 \
F	C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
72	C28	Wall heat transfer rate,	13563	14424	14759	20460	21635	20224	18503	25795
FOLDOUT		Btu/hr	400	e 71	565	1 4 5 4		2015	1.01	2524
ŭ	C28	Standard deviation	420	571	565	1454	444	3015	1621	3534
	C30-1	Heat transfer coeffici-	47.5	46.5	46.7	(b)	(b)	(b)	(b)	(b)
FRAME	000 1	ent 1, Btu/hr ft ² °F	0.7	1.0	1 -	/ L \	/ L \	()	/ L \	/ L)
≨	C30-1	Standard deviation	0.7	1.2	1.5	(b)	(b)	(b)	(b)	(b)
X.	C58	Total heat transfer rate,	442510	452690	424510	166590	219880	172620	106410	258820
7-3	250	Btu/hr	21000	26514	CAFE	11100	E022	20206	1010	COSE
'n	C58	Standard deviation	31222	36514	6455	11103	5832	20206	1918	6935
Γ	C30-2	Heat transfer coeffici-	56.2	54.8	43.8	(b)	(b)	(b)	(b)	(b)
•		ent 2, Btu/hr ft ² °F	0 5	1 1	1 4	(1.)	71.1	751	/ L \	/ L \
	C30-2	Standard deviation	0.5	1.1	1.4	(b)	(b)	(b)	(b)	(b)
	C30-3	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 3, Btu/hr ft ² °F		/. \	71.3	7, 1	71.3	/. \	6.3	/1. \
	C30-3	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

Table 4. - Continued

	ata	Parameter					Test				
cr ne	nan- el		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
05 05 05 05	51 52 52	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 68	(b) (b) (b) (b) 66	(b) (b) (b) (b) 66
07 07		Standard deviation Coolant inlet pressure,	1 74.3	0 77 . 1	0 78.4	0 77 . 7	1 71.8	0 77 . 0	0 77 . 6	1 81.1	0 77.6
07 07 07 07 08	79 79	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	5.4 (b) (b) 25.7	0.6 (b) (b) 23.7	2.6 (b) (b) 24.8	0.4 (b) (b) 23.4	7.3 (b) (b) 23.7	0.3 (b) (b) 22.7	0.5 (b) (b) 23.6	3.1 (b) (b) 32.2	0.5 (b) (b) 23.7
08 08		psia Standard deviation Outlet 1 coolant tempera- ture, F	4.3 (b)	0.2 (b)	4.4 (b)	0.1 (b)	0.8 (b)	0.1 (b)	0.1 (b)	7.3 (b)	0.1 (b)
08 08		Standard deviation Outlet 2 coolant temperature, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
30 30	32	Standard deviation Outlet 3 coolant tempera- ture, F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)
80 80		Standard deviation Outlet 4 coolant tempera- ture, F	(b)	(b) (b)	(b)						
80 80	34	Standard deviation Outlet 5 coolant tempera- ture, F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
80 80	35	Standard deviation Outlet 6 coolant tempera- ture, F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
80 80	36	Standard deviation Outlet 7 coolant tempera- ture, F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(p)	(b)
80 80		Standard deviation Outlet 8 coolant temperature, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
80 80		Standard deviation Outlet 9 coolant tempera- ture, F	(b) (b)	(b)	(b) (b)						

FOLLOUT ERAME

· ye	088	Outlet 8 coolant tempera- ture, °F	(b)								
	088 089	Standard deviation	(b) (b)								
	089	Outlet 9 coolant tempera- ture, °F Standard deviation	(b)								
	090	Outlet 10 coolant tempera- ture, °F	(b)								
	090 091	Standard deviation Outlet 11 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	091 092	Standard deviation Outlet 12 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
	092 093	ture, F Standard deviation Outlet 13_coolant tempera—	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	093 094	ture, F Standard deviation Outlet 14 coolant tempera-	(b) (b)								
	094 095	ture, °F Standard deviation Outlet 15 coolant tempera-	(b) (b)								
	095 096	Outlet 15 coolant tempera- ture, °F Standard deviation Outlet 16 coolant tempera-	(b)	(b) (b)							
	096 096	ture, °F Standard deviation Coolant flow rate, gal/min	(b) (b)								
	096 097 097	Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 2.7 0.3	(b) 2.8 0	(b) 2.8 0.1	(b) 2.8 0	(b) 2.6 0.2	(b) 2.9 0	(b) 2.8 0	(b) 2.7 0.1	(b) 2.8 0
	098	Coolant outlet tempera- ture, °F	68	69	67	69	67	69	69	67	68
	098 101 101 102	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0 (b) (b) 41.6	0 (b) (b) 40.8	0 (b) (b) 41.8	0 (b) (b) 40.7	1 (b) (b) 39.4	0 (b) (b) 40.2	0 (b) (b) 40.8	1 (b) (b) 47.9	0 (b) (b) 40.9
	102 103	°F Standard deviation Outlet 17_coolant tempera-	2.4 (b)	0.1 (b)	3.8 (b)	0.1 (b)	1.4 (b)	0.1 (b)	0.1 (b)	6.2 (b)	0.1 (b)
	103	ture, °F Standard deviation	(b)								

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

1 63

Table 4. - Continued

	Data	Parameter					Test				
	chan- nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
	104	Outlet 18 coolant tempera- ture, °F	(b)								
	104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
	105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
	106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
FOLD.C	107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
FOLDOUT ERAME	108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
AME	109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
	110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
	111 112	Standard deviation Outlet 26 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
	112 113	Standard deviation Coolant flow rate, gal/min	(b) 7.9	(b) 8.3	(b) 8.3	(b) 8.3	(b) 7.6	(b) 8.2	(b) 8.2	(b) 7.8	(b) 8.2
	113 114	Standard deviation Coolant outlet tempera- ture, °F	0.8 68	0 69	0.2 67	0 68	0.7 67	0 69	0 69	0.4 67	0 68
	114 115	Standard deviation Wall coolant top tempera-	0 93	0 99	0 92	0 80	1 82	0 85	0 79	1 82	0 88
	115 116	ture, °F Standard deviation Wall coolant middle	1 121	4 128	3 99	1 81	2 85	1 95	1 109	2 79	2 97
	116 117	temperature, °F Standard deviation Wall coolant bottom	17 102	19 103	28 97	2 98	5 95	9 93	23 95	11 96	20 98
telatoreat arrest	117	temperature, °F Standard deviation	3	1	0	1	2	1	1	1	0

	ocimper address	_	_							
		_								0
120		/9	79	/6	78	//	//	79	78	77
120		1	1	0	0	0	0	2	1	0
121	Wall coolant flow rate, gal/min	3.9	4.0	4.0	4.0	3.7	3.9	4.1	3.8	4.1
121	Standard deviation	0.6	0.2	0.1	0	0.4	0.2	0.2	0.3	0.1
140		21.7	19.2	20.3	19.1	20.0	18.4	19.2	28.0	19.4
140		5.1	0.2	4.6	0	1.6	0.1	0.1	7.7	0
141		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1 4 5		/ \	(1.)	/1. \	/	/1.\	/1.\	71.3	<i>i</i> 1 \	/ 5 \
										(b)
U26	fer rate, Btu/hr									7580
C26	Standard deviation		586							284
C27		(b)	(b)	(b)	(b)	(b)	(D)	(b)	(D)	(b)
C27		(b)	(h)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28		26091	24541	21515	21679	20071	19073	21429	23564	21214
	Btu/hr									
C28	Standard deviation									895
C30-1				, ,						(b)
C30-1	Standard deviation	(b)		(b)		(b)		(b)		(b)
	Total heat transfer rate, Btu/hr									107120
	Standard deviation									3226
C30-2	ent 2, Btu/hr ft ² °F		(b)	(b)						(b)
C30-2			(b)	(b)	(b)	(b)				(b)
C30-3		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C3U 3		(h)	(h)	(b)	(b)	(b)	(b)	(h)	(h)	(b)
C3U-3	Stanuary deviation	(n)	(n)	(0)	(n)	(0)	(0)	(0)	(0)	(0)
	121 140 140 141 141 145 145 C26 C26 C27 C28 C30–1 C30–1 C58 C30–2 C30–2 C30–2 C30–3	117 Standard deviation 120 Wall coolant total temperature, °F 120 Standard deviation 121 Wall coolant flow rate, gal/min 121 Standard deviation 140 Wall coolant outlet pressure, psia 140 Standard deviation 141 Coolant flow rate, gal/min 141 Standard deviation 145 Coolant outlet pressure, psia 145 Standard deviation 146 Standard deviation 147 C26 Heat exchanger heat transfer rate, Btu/hr 148 Standard deviation 149 Standard deviation 140 Standard deviation 141 Coolant outlet pressure, psia 145 Standard deviation 145 C26 Heat exchanger heat transfer rate, Btu/hr 146 Standard deviation 147 Standard deviation 148 Standard deviation 149 Standard deviation 149 Standard deviation 140 C28 Standard deviation 141 C28 Standard deviation 142 Standard deviation 143 Standard deviation 145 Standard deviation 146 Standard deviation 157 Standard deviation 158 Standard deviation 159 Standard deviation 150 Standard deviation	117 Standard deviation 120 Wall coolant total 121 temperature, °F 120 Standard deviation 121 Wall coolant flow rate, 121 gal/min 121 Standard deviation 140 Wall coolant outlet 141 Coolant flow rate, gal/min 141 Standard deviation 142 Standard deviation 143 Standard deviation 144 Coolant flow rate, gal/min 145 Standard deviation 146 Standard deviation 147 Coolant outlet pressure, 148 Standard deviation 149 Coolant outlet pressure, 140 Standard deviation 140 Standard deviation 141 Coolant flow rate, gal/min 142 Coolant outlet pressure, 145 Standard deviation 146 Coolant outlet pressure, 147 Standard deviation 147 Coolant outlet pressure, 148 Standard deviation 149 Coolant outlet pressure, 149 Coolant outlet pressure, 150 Coolant outl	117	117	117	117 Standard deviation 3	117 Standard deviation 3	117 Standard deviation 3	Standard deviation 3

b Data or results were not obtained.

Note

Table 4. - Continued

(f) Continued. Coolant system data

	Data	Parameter				Т	est			
	chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 68	(b) (b) (b) (b) 66	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 69	(b) (b) (b) (b) 67
	077 078	Standard deviation Coolant inlet pressure,	0 77.4	1 80.4	1 73.9	0 83.9	0 83.2	0 77.1	0 78 . 8	0 79 . 1
FOL	078 079 079 080	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.2 (b) (b) 23.8	3.3 (b) (b) 26.9	6.2 (b) (b) 23.1	0.3 (b) (b) 35.1	2.0 (b) (b) 33.4	0.4 (b) (b) 23.7	2.8 (b) (b) 27.2	8.0 (b) (b) 38.8
FOLDOIT I	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.1 (b)	6.7 (b)	0.7 (b)	0.8 (b)	3.8 (b)	0.3 (b)	6.2 (b)	0.5 (b)
TO A ME	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
-	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
	084 085	Standard deviation Outlet 5 coolant temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
	086 087	Standard deviation Outlet 7 coolant temperature, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
	087 088	Standard deviation Outlet 8 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)
	088 089	Standard deviation Outlet 9 coolant temperature, °F	(b)	(b) (b)						
	089	Standard deviation	(b)							

FOLDOUT FRAME /

the after that we have a second	ture, F	(D)	(b)	(D)	(b)	(b)	(p)	(b)	(b)
,088	Standard deviation	(b)							
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(p)	(p)	(p)	(b)
089	Standard deviation	(P)	(b)						
090	Outlet 10 coolant tempera- ture, °F	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(p)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera- ture, °F	(b)							
091	Standard deviation	(b)							
092	Outlet 12 coolant tempera- ture, °F	(p)	(p)	(p)	(b)	(b)	(b)	(p)	(p)
092	Standard deviation	(b)							
093	Outlet 13 coolant tempera- ture, °F	(b)							
093	Standard deviation	(b)							
094	Outlet 14 coolant tempera- ture, °F	(b)							
094	Standard deviation	(b)							
095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
095	Standard deviation	(b)							
096	Outlet 16 coolant tempera- ture, °F	(b)							
096	Standard deviation	(b)	(b)	(b)	(b)	(p)	(b)	(p)	(b)
096	Coolant flow rate, gal/min	(b)	(b)	(p)	(b)	(b)	(b)	(b)	(b) (b)
096 097	Standard deviation Coolant flow rate, gal/min	(b) 2.8	(b) 2.8	(b) 2.7	(b) 2.6	(b) 2.7	2.8	2.7	2.3
097	Standard deviation	0	0.1	0.2	0	0	0	0.1	0.3
098	Coolant outlet tempera- ture, °F	69	67	68	68	68	68	70	70
098	Standard deviation	0	0	0	0	(1.)	(1-)	0	0
101 101	Coolant flow rate, gal/min Standard deviation	(b) (b)							
102	Coolant outlet pressure,	40.9	44.2	39.3	50.8	49.3	40.5	44.0	53.0
102	Standard deviation	0.1	5.7	1.2	0.5	3.4	0.2	5.4	2.5
103	Outlet 17 coolant tempera- ture, °F	(b)							
103	Standard deviation	(b)							

b Data or results were not obtained.

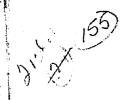


Table 4. - Continued

Data	Parameter				Te	est			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Standard deviation	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
108	Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	Outlet 23 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Standard deviation	(b)	(b)	(b)	(b)	(p)	(p)	(b)	(b)
111	Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Outlet 26 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Standard deviation	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(p)
113	Coolant flow rate, gal/min	8.2	8.2	8.0	7.9	7.9	8.3	8.1	7.1
113	Standard deviation	0	0.3	0.6	0.1	0.1	0	0.3	0.8
114	Coolant outlet tempera- ture, °F	69	67	67	68	68	68	70	69
114	Standard deviation	0	0	0	0	0	0	0	0
115	Wall coolant top tempera- ture, °F	93	85	90	97	100	93	90	99
115	Standard deviation	1	1	2	0	2	2	2	4
116	Wall coolant middle	80	103	111	112	99	128	85	105
116	temperature, °F	0	0.0	1 [1 /	1 -	20	0	21
116	Standard deviation	2	22	15	14	15	28 98	8 102	21 111
117	Wall coolant bottom temperature, °F	97	94	99	102	99	90	102	111
117	Standard deviation	0	1	. 2	0	1	0	2	4
# # # 1	CONTRACTOR ACTION OF THE CONTRACTOR		and the second of the second o		and the second second	unani dan menganan	CONTRACTOR OF THE SECONDARY	 المواجعة المنطقة المنظمة المنطقة	بتهاده فلنا فكالمتصورين

115 116		1 80	1 103	2 111	0 112	2 99	2 128	2 85	4 105
110	temperature, °F								
116	Standard deviation	2	22	15	14	15	28	8	21
117	temperature, °F	97	94	99	102	99	98	102	111
117		0	1	2	0	1	0	2	4
120	temperature, °F	79	76	77	78	78	78	81	82
120		0	0	1	1	1	1	1	2
121	gal/min	4.1	3.8	3.7	3.6	3.9	4.1	3.9	3.3
121		0	0.1	0.3	0.2	0.2	0.2	0.2	0.4
140	pressure, psia	19.4	22.7	19.1	30.8	29.0	19.0	23.0	35.7
140		0	1.0	1.3	0.9	3.9	0.3	6.6	0.3
141		(b)							
141		(b)							
145	psia	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
145		(b)							
C26	fer rate, Btu/hr	7131	6610	7795	8338	8427	7265	6783	9099
C26	Standard deviation	433	697	560	195	347	550	669	1127
C27	fer rate, Btu/hr	(b)							
C27		(b)							
C28	Btu/hr	22520	19121	20431	21327	24195	23794	23525	23602
C28		1016	1444	771	718	1655	3874	570	1082
C30	ent 1, Btu/hr ft ² °F	(b)							
C 30 C 5 8		(b) 162250	(b) 162490	(b) 116790	(b) 152670	(b) 222640	(b) 159870	(b) 166280	(b) 159260
C58		6927	7960	5903	2305	2787	8687	4085	3437
	D-2 Heat transfer coeffici- ent 2, Btu/hr ft ² °F	(b)							
C 30		(b)							
C30)-3 Heat transfer coeffici-	(b)							
	ent 3, Btu/hr ft ² °F		• •		-			-	
C30)-3 Standard deviation	(b)							

b Data or results were not obtained.

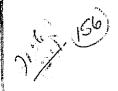


Table 4. - Continued

	Data	Parameter	Test								
	chan- nel		H1	Н2	Н3	Н4	Н5А	Н5В	Н6	H7	Н8
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.2 0 2.5 0 71	2.3 0 2.5 0 70	2.3 0 2.5 0 72	2.2 0.1 2.4 0.1 74	2.3 0 2.6 0 74	2.3 0 2.5 0 75	2.3 0 2.5 0 72	2.2 0 2.5 0 70	2.2 0 2.5 0 73
	077 078	Standard deviation Coolant inlet pressure, psia	1 66	0 66	1 66	1 65	1 66	0 66	1 66	0 66	1 66
FOR	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0 2.2 0 37.4	0 2.2 0 37.5	0 2.2 0 37.4	3 2.1 0.1 37.2	0 2.1 0 36.7	0 2.1 0 36.8	0 2.1 0 36.6	0 2.1 0 36.7	0 2.0 0 36.9
	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.1 108	0 112	0.1 115	0.6 123	0 131	0 131	0.2 131	0.1 131	0.1 134
	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	0 114	0 116	3 118	2 127	1 134	0 136	2 128	0 133	1 140
	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	1 117	0 122	3 123	3 132	1 140	0 145	3 142	1 141	1 146
	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	1 109	0 111	3 111	3 119	2 125	0 128	2 124	1 124	1 128
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	1 114	0 116	3 116	3 124	1 130	0 133	3 130	1 128	2 130
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	1 117	0 122	3 122	3 130	1 135	0 140	1 137	0 135	1 140
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	1 121	0 124	3 126	3 133	1 139	0 146	1 14ਤੇ	1 141	2 145
	087 088	Standard deviation Outlet 8 coolant temperature, °F	1 105	6 108	3 107	3 113	1 120	0 125	1 118	1 118	1 123
	088 089	Standard deviation Outlet 9 coolant tempera-	1 (b)	(b)	2 (b)	2 (b)	(p) Ţ	0 (b)	3 (b)	0 (b)	1 (b)

VØ/	ture, F	121	124	120	133	139	140	145	T4I	
087	Standard deviation	1	6	3	3	1	0	1	1	1
088	Outlet 8 coolant tempera- ture, °F	105	108	107	113	120	125	118	118	123
880	Standard deviation	1	0	2	2	1	0	3	0	1
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) .	(b)	(b)	(b)	(b)
090	Standard deviation	. (b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera- ture, °F									
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(p)	(b)						
095	Outlet 15 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Outlet 16 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
096	Coolant flow rate, gal/min Standard deviation	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
096 097	Coolant flow rate, gal/min	(b) 10.0	(b) 9 . 9	9.9	(b) 9.7	10.1	10.0	9.9	9.9	9.8
097	Standard deviation	0.0	0	0.3	0.4	0.1	0	0.1	0	0.1
098	Coolant outlet tempera- ture, °F	111	114	115	122	128	131	127	127	131
098	Standard deviation	1	0	3	3	1	0	1	1	1
101	Coolant flow rate, gal/min	2.1	2.1	2.1	2.0	2.1	2.0	2.1	2.0	2.0
101	Standard deviation	0	0	0	0.1	0	0	0	0	0
102	Coolant outlet pressure, °F	15.3	14.6	14.2	14.1	16.9	18.1	14.0	14.3	16.4
102	Standard deviation	0.5	0.2	0.1	0.1	0.7	0.2	0	0.3	0.5
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

N/2 (61)

Table 4. - Continued

(f)	Continued.	Coolant	system	data	
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	Data	Parameter					Test				
	chan- nel		Н1	H2	Н3	Н4	H5A	Н5В	Н6	H7	Н8
	104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
	104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
	105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	106 107	Standard deviation Outlet 21 coolant tempera- ture, F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
) 1	107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
	108 109	Standard deviation Outlet 23 coolant tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)
	109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
	110 111	Standard deviation Outlet 25 coolant tempera- ture, F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(p)
	111 112	Standard deviation Outlet 26 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
	112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 10.0 0 71	(b) 10.0 0 71	(b) 10.0 0 72	(b) 10.0 0.4 75	(b) 9.0 0.8 75	(b) 8.4 0 76	(b) 8.3 0 73	(b) 8.2 0 71	(b) 8.3 0 74
	114 115	ture, °F Standard deviation Wall coolant top tempera-	1 98	0 98	1 98	1 96	1 105	0 112	1 96	0 98	1 104
	115 116	ture, °F Standard deviation Wall coolant middle	2 106	1 102	1 97	1 93	2 119	2 120	2 96	2 109	4 113
	116 117	temperature, °F Standard deviation Wall coolant bottom temperature, °F	8 100	6 100	4 103	9 106	38 118	30 122	25 112	11 123	13 129
in utern	117	Standard deviation	1	0	1	1	2	1.	3	0	2

	Francisch Clink City Call C. 2000 C. Commerce Co. Co. Co.	ST to the standard of a 12 day of	MATERIAL SECTION OF A COLUMN SECTION OF THE PARTY AND A SECTION OF THE PART	control Manuscripture Aging			•			
120	Standard deviation	1	0	1	2	3	1	1	0	1
121	Wall coolant flow rate,	3.6	3.6	3.6	3.4	3.2	3.3	3.2	3.2	3.2
121	gal/min	0.1	0.1	0.1	0.2	0.1	0.3	0	0.1	0.2
140	Standard deviation Wall coolant outlet	31.4	31.6	31.4	31.3	31.2	31.2	31.1	31.2	31.3
140	pressure, psia	31.4	21.0	31.4	31.3	31.4	21.5	J1•1	01.6	01.0
140	Standard deviation	0	0	0	0	0	0	0.1	0.1	0.1
141	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans-	206330	224360	217600	234520	278770	276300	280730	284510	286350
	fer rate, Btu/hr									
C26	Standard deviation	5688	1943	9053	4207	2537	1950	3897	2604	8778
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
C27	fer rate, Btu/hr Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	15977	17001	17135	16955	20984	19191	14056	16355	17856
020	Btu/hr	10377	17001	17.100	20300	2050.	23232	2.000		
C28	Standard deviation	172	338	480	980	5080	3361	1217	714	1648
C30-1	Heat transfer coeffici-	47.4	52.5	56.7	61.7	64.8	62.6	65.9	67.4	65.5
000 1	ent 1, Btu/hr ft ² °F	0.5	0.6	0.0	1.0	0.5	0.0	2 5	0.6	0.0
C30-1	Standard deviation	0.5 303990	0.6 392390	2.2 414110	1.0 410640	0.5 529010	0.2 591330	2.5 558120	0.6 572610	0.9 515610
C58	Total heat transfer rate, Btu/hr	303330	392390	414110	410040	323010	331330	550120	372010	313010
C58	Standard deviation	5479	6382	13700	8465	2841	3463	18785	7560	12347
C30-2		50.8	55.2	57.3	63.2	63.8	64.4	58.8	65.2	66.8
	ent 2, Btu/hr ft ² °F									
C30-2	Standard deviation	0.8	0.5	2.4	0.7	0.3	0.2	2.7	0.6	0.9
C30-3	Heat transfer coeffici-	47.3	50.7	50.7	53.8	55.5	57.3	56.6	58.7	58.5
	ent 3, Btu/hr ft ² °F						2 2	0.0		0.0
C30-3		0.7	0.1	1.6	0.8	1.0	0.2	2.2	0.6	2.2
C30-4	Heat transfer coeffici- ent 4, Btu/hr ft ² °F	54.3	59.8	61.9	66.7	68.7	71.1	71.9	73.7	73.5
C30-4		0.8	0.4	2.4	1.0	1.3	0.2	2.0	0.4	0.5
C30-5		56.3	61.2	62.4	65.3	68.2	69.2	69.0	68.5	66.2
	ent 5, Btu/hr ft ² °F									
C30-5	Standard deviation	0.7	0.8	1.8	0.5	0.3	0.3	1.6	0.7	0.7
C30-6	Heat transfer coeffici- ent 6, Btu/hr ft ² °F	57.6	66.0	65.6	69.2	69.9	73.3	73.7	73.4	72.5
C30-6		0.9	0.4	1.9	0.8	0.4	0.4	1.1	0.5	2.6
C30-7	Heat transfer coeffici-	49.7	53.9	53.9	56.1	63.2	65.4	61.2	64.4	64.8
	ent 7, Btu/hr ft ² °F							_		
C30-7		1.1	0.5	1.5	1.9	0.6	0.2	2.5	0.5	1.8
C30-8	Heat transfer coeffici-	68.1	73.6	76.9	80.7	84.6	88.4	89.2	90.1	88.6
C20 0	ent 8, Btu/hr ft ² °F	Λ Λ	1 0	0.6	Λ 4	Λ <i>Δ</i>	0.0	1 1	n 2	0 5
U3U−8	Standard deviation	0.9	1.0	2.6	0.4	0.4	0.6	1.1	0.3	0.5

b Data or results were not obtained.

J. 188)

FOLDOUT FRAME

Table 4. - Continued

(f) Continued. Coolant system data

			` '			•					
	Data	Parameter					Test				
	chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.1 0 2.4 0 73	2.1 0 2.4 0 70	2.2 0.1 2.6 0.1 66	2.2 0.1 2.7 0.1 66	2.1 0.1 2.6 0.1 66	2.1 0.1 2.6 0.1 63	2.1 0.1 2.7 0.1 60	2.2 0 2.7 0 64	2.1 0.1 2.6 0.1 65
	077 078	°F Standard deviation Coolant inlet pressure,	1 66.4	1 66.5	1 66.3	1 64.6	0 66.4	3 66.4	1 66.5	1 66.5	0 66.4
	078 079 079 080	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.1 2.2 0 37.1	0.2 2.2 0 37.0	0.2 2.2 0 31.4	2.8 2.1 0.1 32.2	0.1 2.1 0 34.2	0 2.1 0 31.8	0.2 2.1 0 29.0	0.2 2.1 0 26.0	0.3 2.0 0 32.5
}	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.1 131	0 126	5.5 123	5.2 113	5.7 127	5.7 133	5.6 135	1.2 142	5.1 151
	081 082	Standard deviation Outlet 2 coolant tempera- ture, F	1 137	1 131	4 126	2 113	3 127	3 113	3 111	5 113	3 118
	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	1 143	1 138	4 133	2 119	4 135	2 123	2 121	3 128	4 141
	083 084	Standard deviation Outlet 4 coolant temperature, F	1 127	1 121	4 116	2 105	4 118	2 108	2 105	5 110	3 120
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	1 128	1 123	3 117	1 106	3 116	2 110	2 109	4 113	2 121
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	1 139	1 133	3 129	2 116	3 129	2 118	2 115	3 120	2 133
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	1 143	1 139	4 133	3 119	4 132	2 122	2 120	4 125	2 137
	087 088	Standard deviation Outlet 8 coolant tempera- ture, F	1 121	1 115	4 111	3 99	4 110	2 87	3 88	4 82	4 74
	088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	1 (b)	1 (b)	3 (b)	2 (b)	3 (b)	16 (b)	10 (b)	1 (b)	3 (b)
	000	Standard douistion	761	(6)	(b)		- hare		and the Source	. mark Hilman	account (h)

087	Outlet 7 coolant tempera- ture, °F	143	139	133	119	132	122	120	125	137
087	Standard deviation	1	1	4	3	4	2	3	4	4
088	Outlet 8 coolant tempera- ture, °F	121	115	111	99	110	87	88	82	74
880	Standard deviation	1	1	3	2	3	16	10	1	3
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)			(b)			
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera- ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
096	Outlet 16 coolant tempera- ture, F	(b)	(b)					(b)	(b)	(b)
096	Standard deviation	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096 097	Standard deviation	(b) 9.7	(b) 9.6	(b) 10.0	(b) 9.8	(b) 9.2	(b) 9.2	(b) 9.0	(b) 9.4	(b) 9.2
097	Coolant flow rate, gal/min Standard deviation	0.1	9.0	0.6	0.4	0.6	0.6	0.5	0.1	0.5
097	Coolant outlet tempera-	129	123	119	108	119	110	109	113	122
	ture, °F									
098	Standard deviation	1	1 2.0	3 2 . 2	2 2 . 2	3 2 . 2	2 2 . 1	2 2 . 2	3 2.3	2 2.1
101	Coolant flow rate, gal/min	2.0 0	2.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
101 102	Standard deviation Coolant outlet pressure,	13.7	13.0	12.5	12.2	12.7	13.0	14.8	15.9	14.0
	° F									
102	Standard deviation	0.4	0.1	0.1	0.1	0.1	0.2	0.5	0.2	0.4
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. – Continued

			(,,			,					
	Data	Parameter					Test				
	chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
	104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	105	Standard deviation	(b)	(b)	(p)	(b)	(p)	(p)	(p)	(p)	(p)
	106	Outlet 20 coolant tempera- ture, °F	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
1	107	Standard deviation	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
) !	108	Outlet 22 coolant tempera- ture, F	(b)	(b)	(b)	(b)		(b)			(b)
1	108	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
	109	Outlet 23 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	•	(b)
	109 110	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		Outlet 24 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)		-		
	110 111	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		Outlet 25 coolant tempera- ture, °F									•
	111 112	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		Outlet 26 coolant tempera- ture, F				. ,			·		
	112 113	Standard deviation	(b) 8.3	(b) 8.3	(b) 8.7	(b) 8.5	(b) 8.1	(b) 10.2	(b) 9.3	(b) 8.7	(b) 8.2
	113	Coolant flow rate, gal/min Standard deviation	0.3	0.3	0.5	0.4	0.4	0.5	0.3	0.2	0.4
	114	Coolant outlet tempera-	74	71	67	67	67	63	62	65	66
		ture, °F	•		•	٠,	•				
	114	Standard deviation	1	1	1	0	0	3	1	1	0
	115	Wall coolant top tempera- ture, °F	97	92	90	84	88	72	84	92	89
	115	Standard deviation	1	2	3	1	1	2	3	2	3
	116	Wall coolant middle temperature, °F	120	104	115	105	98	75	108	108	124
	116	Standard deviation	18	11	26	16	16	13	42	22	39
	117	Wall coolant bottom temperature, °F	128	125	133	146	152	133	145	152	150
	117	Standard deviation	1	1	11	2	2	6	2	2	_1
KIER:	120	Wall coolant total	83	81	78	74		, 70 m	69		news a 74

en i cue	120	Wall coolant total	83	81	78	74	77	70	69	73	74
	120	temperature, °F Standard deviation	1	1	. 2	1	4	2	1	2	1
	121	Wall coolant flow rate, gal/min	3.2	3.2	3.3	3.1	2.9	3.0	3.0	3.1	2.9
	121	Standard deviation	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
	140	Wall coolant outlet pressure, psia	31.7	31.6	25.2	25.4	27.5	26.0	22.5	19.4	26.6
	1.40	Standard deviation	0.2	0	5.9	5.8	6.4	6.2	6.2	1.3	5.8
	141	Coolant flow rate, gal/min	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	141 145	Standard deviation Coolant outlet pressure,	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
_	742	psia	(5)	(5)	(5)	(5)	(6)	(5)	(1)	(0)	(5)
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans-	274270	261910	266330	206800	247820	220060	222850	237490	266870
	020	fer rate, Btu/hr	_, ,_,,								
	C26	Standard deviation	3274	3487	4432	3725	5739	6826	6859	10929	7398
	C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	007	fer rate, Btu/hr	(L)	/ L\	/L\	/L\	(h)	(5)	(h)	(b)	(b)
	C27 C28	Standard deviation Wall heat transfer rate,	(b) 16771	(b) 17518	(b) 19672	(b) 12721	(b) 15976	(b) 10917	(b) 12845	13616	11804
		Btu/hr									
	C28 C30-1	Standard deviation	1295 62 . 2	951 60.0	5121 60.6	1005 54.4	5342 59.5	617 67 . 8	851 74.4	2726 82.4	1119 78.9
	C3U-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	02.2	00.0	00.0	34.4	59.5	07.0	/4.4	02.4	70.9
	C30-1	Standard deviation	1.0	0.4	0.7	0.8	0.7	1.6	3.7	2.5	1.4
	C58	Total heat transfer rate,	489360	554210	521620	335760	472250	378660	395610	454310	485330
		Btu/hr									
	C58	Standard deviation	23591	6456	6003	9400	5481	12315	9864	14714	7586
	C30-2	Heat transfer coeffici-	63.8	61.2	60.6	51.9	56.9	45.7	47.0	48.7	44.7
	C20 2	ent 2, Btu/hr ft ² °F	0.7	0.5	1.1	0.0	1.0	0.6	1.7	0.9	3.8
	C30-2 C30-3	Standard deviation Heat transfer coeffici-	56.8	54.2	56.7	0.8 49.6	60.8	55.4	57.2	61.1	61.8
		ent 3, Btu/hr ft ² °F									
	C30-3 C30-4	Standard deviation Heat transfer coeffici-	0.7 70.3	0.5 69.0	0.6 71.6	1.0 64.3	1.2 76.9	0.8 70.1	2.7 73.4	1.4 80.8	3.1 82.2
	C30-4	ent 4, Btu/hr ft ² °F	70.3	03.0	/1.0	04.5	70.9	70.1	75.4	00.0	02.2
	C30-4	Standard deviation	0.6	0.7	0.6	1.2	1.7	1.1	2.7	2.1	1.5
	C30-5	Heat transfer coeffici-	62.5	60.8	59.2	52.1	55.9	57.5	60.6	63.2	61.6
		ent 5, Btu/hr ft ² °F									2 2
		Standard deviation	0.8	0.5	0.7	0.8	0.5	1.8	$\frac{1.1}{64.2}$	1.2	0.8
	C30-6	Heat transfer coeffici- ent 6, Btu/hr ft ² °F	71.3	68.6	69.0	60.5	66.3	63.6	64.2	67.4	71.1
	C30-6		0.8	0.7	0.5	1.3	0.8	0.8	1.5	1.4	1.0
	C30-7	Heat transfer coeffici-	62.5	59.6	60.3	51.9	60.5	36.3	42.0	28.5	11.3
		ent 7, Btu/hr ft ² °F					• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •			
	C30-7	Standard deviation	1.1	0.8	1.0	1.5	1.3	26.8	13.9	2.2	3.0
	C30-8	Heat transfer coeffici-	86.8	85.6	85.9	78.6	86.1	85.6	88.4	92.4	93.8
	0.00	ent 8, Btu/hr ft ² °F	2 2	2.5	4 ^	4 ~	4 ^	4	1 -	0 1	1 1
	C30-8	Standard deviation	8.0	0.9	1.0	1.0	1.3	1.5	1.5	2.1	1.1

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

1) X (E)

Table 4. - Continued

(f) Continued. Coolant system data

	Data	Parameter			Te	st		
	chan- nel		H19	H20	H23	H24	H25	H26
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.6 0.1 3.0 0.1 67	2.5 0 2.9 0.1 67	2.3 0.1 2.7 0.1 67	2.4 0.1 2.8 0.1 67	2.5 0.1 2.9 0.1 67	2.6 0.1 3.0 0.1 67
	077 078	Standard deviation Coolant inlet pressure, psia	0 67 . 9	0 64.5	0 56.2	0 59.3	0 62.8	0 68.5
!	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, psia	3.5 2.2 0.1 23.3	1.7 2.2 0.1 22.6	3.1 2.0 0.1 21.3	2.6 2.1 0.1 21.8	2.5 2.2 0.1 22.1	2.2 2.4 0.1 22.8
	080 081	Standard deviation Outlet 1 coolant tempera- ture, °F	0.7 129	0.3 132	0.6 131	0.5 130	0.5 129	0.3 126
	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	2 113	1 114	3 117	2 117	2 116	1 113
•	082 083	Standard deviation Outlet 3 coolant temperature, °F	1 127	1 127	3 128	2 127	1 125	1 122
	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	2 113	2 113	2 115	2 116	2 116	1 113
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	2 114	2 115	3 117	1 115	1 114	1 111
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	1 123	1 124	2 127	2 127	1 126	1 123
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	2 124	1 125	3 127	2 124	1 123	1 120
	087 088	Standard deviation Outlet 8 coolant temperature, °F	2 (b)	1 (b)	2 (b)	2 (b)	2 (b)	1 (b)
	088 089	Standard deviation Outlet 9 coolant temperature, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
	000	Characterist to the	4. 3	4. 3		260.3		

FOLDOUT FRAME

ng in the memory of	whether we see the sees	ture, F	TETT	TEO	127	167	120	120
	007		2	1	2	0	2	1
	087 088	Standard deviation	2 (b)	1 (b)	2 (b)	2 (b)	(b)	1 (b)
	066	Outlet 8 coolant tempera- ture, °F	(0)	(0)	(5)	(0)	(5)	(5)
	880	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	000	ture, °F	(b)	(b)	(b.)	(b)	/ b)	(b)
	089 090	Standard deviation Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b) (b)	(b)
	030	ture, °F	(5)	(5)	(5)	(5)	(5)	
	090	Standard deviation	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)
	091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
	091	ture, F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	092	Outlet 12 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
		Outlet 12 coolant tempera- ture, F						
	092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
	093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	094	Outlet 14 coolant tempera-	(b)	(b)	(b)	_ (b)	(b)	(b)
		ture, °F					4. 3	4. 3
	094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	095	Outlet 15 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
	095	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	096	Outlet 16_coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	006	ture, °F Standard deviation	(b)	(b.)	(b)	(b.)	(b)	(b)
	096 096	Coolant flow rate, gal/min	1.4	(b) 1.3	(b) 1.2	(b) 1.3	1.3	1.4
O	096	Standard deviation	0	0	0.1	0.1	0	0
FOLDOUT	097	Coolant flow rate, gal/min	11.7	11.5	10.5	10.9	11.4	12.2
õ	097	Standard deviation	0.5	0.2	0.4	0.3	0.3	0.3
	098	Coolant outlet tempera- ture, °F	114	115	117	116	116	112
FRAME	098	Standard deviation	2	1	2	2	1	1
Ą	101	Coolant flow rate, gal/min	2.6	2.5	2.2	2 2.3	2.5	2.7
日	101	Standard deviation	0.1	0.1	0.1	0.1	0.1	0.1
L)	102	Coolant outlet pressure,	13.3	13.2	13.9	13.7	12.7	12.4
7	102	°F Standard deviation	0.1	0.1	0.1	0.4	0.2	0.1
•	103	Outlet 17 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
		Outlet 17 coolant tempera- ture, °F						
	103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

11/2/201

Table 4. - Continued

Data	Parameter			Tes	st		
chan- nel		H19	H20	H23	H24	H25	H26
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 10.1 0.4 68	(b) 9.7 0.2 68	(b) 8.8 0.3 68	(b) 9.1 0.2 68	(b) 9.4 0.3 68	(b) 10.0 0.2 68
114 115	ture, °F Standard deviation Wall coolant top tempera- ture, °F	0 84	0 76	0 81	0 86	0 82	0 78
115 116	Standard deviation Wall coolant middle temperature, °F	4 100	3 107	1 92	2 69	2 61	0 61
116 117	Standard deviation Wall coolant bottom temperature, °F	22 148	15 141	24 135	2 131	2 124	1 116
117	Standard deviation	4	1	2	2	2	2

121	Wall coolant flow rate, gal/min	3.7	3.5	3.3	3.5	3.7	4.1
121 140	Standard deviation Wall coolant outlet	0.2 14.6	0.1 14.4	0.1 14.0	0.1 14.2	0.1 13.9	0.1 13.8
140 141 141	pressure, psia Standard deviation Coolant flow rate, gal/min Standard deviation	0.1 (b) (b)	0.1 (b) (b)	0.1 (b) (b)	0.1 (b) (b)	0.1 (b) (b)	0 (b) (b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)
145 C26	Standard deviation Heat exchanger heat trans-	(b) 279180	(b) 276620	(b) 263040	(b) 270480	(b) 279070	(b) 279630
C26	fer rate, Btu/hr Standard deviation	6490	4899	9504	3708	5262	5116
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)
C27 C28	Standard deviation Wall heat transfer rate, Btu/hr	(b) 14845	(b) 17215	(b) 17069	(b) 19333	(b) 19117	(b) 19397
C28 C30-1	Standard deviation Heat transfer coeffici-	3173 73.4	5847 74.5	661 66.7	2407 68.5	668 72 . 6	1038 74.5
C30-1 C58	ent 1, Btu/hr ft ² °F Standard deviation Total heat transfer rate,	1.8 508490	1.1 517030	1.1 503790	1.7 506390	0.8 518410	0.7 527850
C58	Btu/hr Standard deviation	8057	10786	13615	6038	4730	7475
C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	51.3	51.0	48.3	51.1	53.3	54.8
C30-2 C30-3	Standard deviation Heat transfer coeffici-	1.2 64.7	0.6 61.1	1.3 56.1	1.5 60.7	0.8 63.5	0.8 65.3
C30-3 C30-4	ent 3, Btu/hr ft ² °F Standard deviation Heat transfer coeffici-	1.4 80.7	2.4 75.8	2.1 67.3	1.5 69.5	0.9 72.3	0.7 73.4
C30-4	ent 4, Btu/hr ft ² °F	1.6	3.1	1.5	1.5	0.9	0.5
C30-5	Heat transfer coeffici- ent 5, Btu/hr ft ² °F	65.2	63.8	59.8	60.0	61.9	62.6
C30-5 C30-6	Standard deviation Heat transfer coeffici-	0.9 74.1	1.1 71.8	0.6 68.4	0.9 71.0	0.8 73.2	0.5 74.1
C30-6 C30-7	Heat transfer coeffici-	0.8 2.8	0.8 0.9	2.1 7.1	1.4 5.6	0.7 (b)	0.8 (b)
C30-7 C30-8	ent 7, Btu/hr ft ² °F Standard deviation Heat transfer coeffici-	1.4 86.8	0.8 84.6	3.4 78.9	1.8 79.0	(b) 81.3	(b) 81.4
C30-8	ent 8, Btu/hr ft ² °F Standard deviation	1.2	0.9	1.4	1.2	0.8	0.5

b Data or results were not obtained.

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Table 4. - Continued

Data	Parameter					Test				
chan- nel		11	12	13	14.	I5A	I5B	16	17	18
051	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.2	2.3	2.2	2.3	2.3	2.3	2.5	2.7	2.7
051		0	0.1	0.1	0.1	0	0	0.1	0	0
052		2.2	2.3	2.1	(b)	(b)	(b)	2.3	2.6	2.7
052		0	0.1	0	(b)	(b)	(b)	0.1	0.1	0.1
077		65	65	65	65	65	66	66	65	65
077 078	°F Standard deviation Coolant inlet pressure,	1 65.6	1 62.0	0 63.2	1 62.5	0 61.0	0 61.1	0 60.8	0 61.6	0 62.0
078	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	0.1	2.0	2.3	2.2	0.2	0.2	0.6	1.6	1.5
079		2.3	2.4	2.3	2.4	2.4	2.4	2.6	2.7	2.8
079		0	0.1	0.1	0.1	0	0	0.1	0.1	0
080		38.1	30.6	34.1	32.5	30.4	31.2	25.8	23.3	23.4
080	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0.1	4.8	5.0	5.4	0.9	0	1.9	0.4	0.2
081		115	111	113	106	106	106	112	109	111
081	Standard deviation Outlet 2 coolant tempera- ture, °F	1	3	2	2	1	1	2	1	1
082		130	124	130	120	119	119	126	121	124
082	Standard deviation Outlet 3 coolant tempera- ture, °F	1	3	3	3	1	1	2	1	2
083		142	136	142	131	130	129	136	130	133
083	Standard deviation Outlet 4 coolant tempera- ture, °F	1	4	3	4	1	1	3	1	2
084		124	118	122	114	113	112	119	115	118
084	Standard deviation Outlet 5 coolant tempera- ture, °F	1	3	2	3	1	0	2	1	1
085		130	125	127	120	119	119	126	123	124
085	Standard deviation Outlet 6 coolant tempera- ture, °F	1	3	3	3	1	1	2	1	1
086		139	133	138	129	128	127	136	131	132
086	Standard deviation Outlet 7 coolant tempera- ture, °F	1	4	3	4	1	1	2	1	2
087		139	135	138	130	131	130	136	132	133
.087	Standard deviation Outlet 8 coolant tempera- ture, °F	1	4	2	4	1	1	2	1	2
088		118	108	116	108	106	107	92	72	69
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	1 (b)	7 (b)	3 (b)	3 (b)	1 (b)	0 (b)	10 (b)	1 (b)	(b)

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2.7	ture, r	an madeus News, desirates en en entre en l'Addis est égéps	- 15.880 CHILDREN - A 15.8 SEE WARRY	entre entre and entre entre in the entre e	4 62 C	a contracted to the theory of the	A SECRET CARRIES CONTRACTOR	Stand Considering it-officer	. Anger . et a et c	THE SECRETARY OF THE PARTY OF THE PARTY.
.087	Standard deviation	1	4	2	4	1	1	2	1	2
880	Outlet 8 coolant tempera- ture, °F	118	108	116	108	106	107	92	72	69
880	Standard deviation	1	7	3	3	1	0	10	1	0
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F		` ,							
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
033	ture, F	(5)	(6)	(6)	(6)	(5)	(5)		(5)	(2)
095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Outlet 16 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F							4. 3	4. 3	4. 3
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) 1.2
096	Coolant flow rate, gal/min	1.1_{-}	1.2	1.1	1.1	1.1	1.1_{0}	1.2	1.2	
096	Standard deviation	0	0.1	0	0.1	0	0	0	0	11 5
097	Coolant flow rate, gal/min	9.9	10.4	9.9	9.9	10.0	9.9	10.9	11.4	11.5
097	Standard deviation	0.1_{124}	0.5	0.4	0.6	0.1	114	0.2 121	0.2 117	0.2 119
098	Coolant outlet tempera- ture, °F	124	120	123	115	115	114			
098	Standard deviation	1	3	2	3	1	1	2	1	1
101	Coolant flow rate, gal/min	2.0	2.1	2.0	2.0	2.0	2.0	2.2	2.4	2.4
101	Standard deviation	0	0.1	0.1	0.1	0	0	0.1	0	0.1
102	Coolant outlet pressure,	16.2	16.3	15.4	15.0	14.7	14.9	15.7	15.4	15.1
102	Standard deviation	0.4	0.4	0.2	0.1	0	0.1	0.1	0.1	0.0
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

	Data	Parameter					Test				
	chan- nel		I1	12	13	14	I5A	I5B	16	17	18
	104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	105 106	Standard deviation Outlet 20 coolant temperature, F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	107 108	Standard deviation Outlet 22 coolant tempera- ture, F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
1	108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
	109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
	110 111	Standard deviation Outlet 25 coolant temperature, F	(b) (b)	(p)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(p)
	111 112	Standard deviation Outlet 26 coolant temperature, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
	112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 8.0 0 66	(b) 8.5 0.4 67	(b) 8.2 0.4 66	(b) 8.4 0.5 66	(b) 8.5 0.1 66	(b) 8.4 0 67	(b) 9.1 0.2 67	(b) 9.4 0.1 66	(b) 9.5 0.2 66
	114 115	ture, °F Standard deviation Wall coolant top tempera- ture, °F	1 81	1 87	0 78	1 76	0 71	0 72	0 79	0 82	0 82
	115 116	Standard deviation Wall coolant middle temperature, °F	4 82	5 102	2 95	2 106	0 78	1 68	3 101	1 80	1 70
	116 117	Standard deviation Wall coolant bottom temperature, °F	24 92	26 95	10 96	33 95	15 96	2 97	19 95	8 95	4 94
	117	Standard deviation	2	2		- Linn	0		namen i 2storia	and the man commendate when	tomanous and Osc.

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120	Scandard devideron					· •	~ ~	Elect branch at Tran		M. A
121	Wall coolant flow rate, gal/min	3.7	3.9	3.7	3.9	3.7	3.7	4.0	4.3	4.4
121	Standard deviation	0.1	0.2	0.2	0.3	0.1	0	0.2	0.1	0.1
140	Wall coolant outlet	30.6	22.4	26.4	24.5	22.2	23.1	16.6	14.4	14.1
140	pressure, psia Standard deviation	0.1	5.4	5.7	6.1	1.0	0	1.8	0.1	0
140	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(þ)	(b)	(b)
	psia	` '	. ,		(-)	. ,	. ,		. ,	
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans-	294940	286830	292040	251080	252490	243840	303520	298650	314320
	fer rate, Btu/hr									
C26	Standard deviation	5606	7000	4594	2731	4216	2898	6825	7178	5136
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	19813	21749	20101	21280	19110	18432	20395	21783	21842
	Btu/hr	1007	1 401	001	4400	200	244	1000	470	1.00
C28	Standard deviation	1887	1431	821 65.5	4428	320 63.4	344 62 . 6	1988 69.8	479 69.6	469 72.5
C30-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	65.8	65.4		63.1					
C30-1	Standard deviation	0.6	0.6	0.5	0.7	0.4	0.5	0.6	1.2	0.2
C58	Total heat transfer rate,	578940	616340	521550	418180	466410	468850	583000	628350	570770
CEO	Btu/hr	15053	20310	4485	4524	3908	5370	10604	11 630	4679
C58 C30-2	Standard deviation Heat transfer coeffici-	66.4	65.6	67.8	65.3	65.6	64.4	70.0	68.0	73.1
C30-2	ent 2, Btu/hr ft ² °F	00.4	05.0	07.0	05.5	03.0	04.4	70.0	00.0	73.1
C30-2		0.6	0.7	0.5	0.7	0.6	0.1	0.8	0.8	1.0
C30-3	Heat transfer coeffici-	60.1	58.9	59.5	56.9	57.0	55.6	62.3	62.4	66.2
	ent 3, Btu/hr ft ² °F									
C30-3	Standard deviation	0.4	1.2	0.7	0.9	0.4	0.2	1.0	0.9	0.5
C30-4	Heat transfer coeffici-	75.0	75.0	75.8	72.5	72.9	72.4	78.6	76.3	80.4
	ent 4, Btu/hr ft ² °F	0.0	2 2		7 4	2 =		0 5	1 0	ο -
C30-4		0.6	0.9	0.7	1.4	0.5	0.2	0.5	1.2	0.5
C30-5	Heat transfer coeffici-	73.2	73.9	73.4	72.9	71.5	71.4	79.4	80.7	81.6
C 20 E	ent 5, Btu/hr ft ² °F Standard deviation	0.8	1.0	0.4	0.6	0.5	0.5	0.9	1.0	0.7
C30-5	Heat transfer coeffici-	78.6	79.8	81.6	80.4	78.9	78.2	86.9	86.6	88.4
030-0	ent 6, Btu/hr ft ² °F	70.0	73.0	01.0	00.4	70.5	70.2	00.5	00.0	00.1
C30-6	Standard deviation	0.7	1.1	0.7	0.6	0.7	0.6	1.1	1.0	1.0
C30-7	Heat transfer coeffici-	61.8	52.2	60.2	(b)	(b)	(b)	31.9	8.3	4.8
	ent 7, Btu/hr ft ² °F				• •	` ,	• •			
C30-7	Standard deviation	1.1	6.0	1.5	(b)	(b)	(b)	11.3	1.5	0.4
C30-8	Heat transfer coeffici-	81.7	81.9	79.6	(b)	(b)	(b)	81.8	87.4	90.5
	ent 8, Btu/hr ft ² °F	.			7. 3					
C30-8	Standard deviation	1.2	1.2	0.7	(b)	(b)	(b)	2.3	2.2	1.3

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

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Table 4. - Continued

(f) Continued. Coolant system data

	Data	Parameter			Te	st		
	chan- nel		19	I 10A	I10B	111	112	113
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.6 0.1 2.6 0.1 65	2.3 0.1 2.2 0.1 65	2.4 0 2.3 0 64	2.3 0.1 2.2 0 66	2.4 0 (b) (b) 65	2.5 0.1 (b) (b) 66
	077 078	Standard deviation Coolant inlet pressure,	0 62.0	1 63.8	$\overset{0}{61.1}$	1 62.0	0 61.2	1 58.4
	078 079 079 080	psia Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, psia	1.8 2.7 0.2 25.7	2.2 2.3 0.1 37.1	0.1 2.5 0 30.2	1.9 2.4 0.1 32.6	0.1 2.5 0 28.8	4.5 2.6 0.1 25.0
;	080 081	Standard deviation Outlet 1 coolant tempera- ture, °F	3.3 106	5.5 112	0.1 105	4.7 108	0.8 110	2.4 113
	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	3 116	2 126	0 117	2 121	2 122	2 120
	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	4 125	2 137	1 128	3 132	3 134	5 140
	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	5 112	3 121	0 114	4 117	4 117	4 121
	084 085	Standard deviation Outlet 5 coolant tempera- ture, F	3 118	2 127	0 119	2 122	3 124	3 128
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	4 124	3 135	0 126	3 130	3 132	4 139
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	4 126	3 137	1 128	4 132	3 134	4 140
	087 088	Standard deviation Outlet 8 coolant temperature, °F	4 80	3 114	1 109	4 111	3 106	4 68
	088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	19 (b)	3 (b)	(b)	2 (b)	6 (b)	3 (b)
74.		Carried Section Calculate Carried Carr		BARRIORE (L.)		Land Links	mer political distress	Carried Lillians

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	ture, r		18.2	in and the second of	(The service of the	and the second	Control and the second whereast
087	Standard deviation	4	3	1	4	3	4
880	Outlet 8 coolant tempera-	80	114	109	111	106	68
088	ture, °F Standard deviation	19	3	0	2	6	3
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
003	ture, °F	(~)	(-)		(/	` '	. ,
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F	/+ \	71.3	/ 5. 3	/ L \	161	/ L \
090	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(0)	(0)	(D)	(0)	(5)
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	ture, F	/	71.3	71.3	/ L \	/ L \	/ L\
092	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
093	Outlet 13 coolant tempera- ture, °F	(b)	(0)	(0)	(D)	(6)	(0)
093	Standard deviation	(b)	(b)	(b)	(0)	(b)	(b)
094	Outlet 14 coolant tempera-	(b)	(b)	(b)	(a)	(b)	(b)
031	ture, °F	\ /	, ,	` '	` ,	` '	
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)
005	ture, F	(b)	/h\	(b.)	(b.)	(b)	(b)
095 096	Standard deviation Outlet 16 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
030	ture, °F	(5)	(5)	(5)	(2)	(-)	
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	1.2	1.0	1.1	$\frac{1.1}{1}$	1.1_{-0}	1.1
096	Standard deviation	0.1	0.1	0	0.1	10.0	0.1
097	Coolant flow rate, gal/min	11.2	9.4	10.1	9.8	10.2	10.5
097	Standard deviation	0.7	0.6	0.1_{114}	0.5	0.1	0.5 122
098	Coolant outlet tempera-	113	121	114	117	119	122
000	ture, F	3	2	0	3	3	3
098	Standard deviation	2.3	2.0	2.1	2.1	2.2	2.2
101	Coolant flow rate, gal/min	0.1	0.1	0	0.1	0	0.1
101 102	Standard deviation Coolant outlet pressure,	15.1	15.9	16.1	15.8	14.5	14.8
102	°F	13.1	13.3	10.1	13.0	11.0	11.00
102	Standard deviation	0	0.3	0.1	0.5	0.1	0.1
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
			/· \	/	(1.3	/ 1 \	/ : \
103	Standard deviation	(b)	(b)	(p)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

	(,,						
Data	Parameter			Te	st		
chan- nel		19	I10A	I10B	111	112	113
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
105 106	Standard deviation Outlet 20 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
106 107	ture, °F Standard deviation Outlet 21 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
109 110	Standard deviation Outlet 24 coolant tempera-	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
110 111	ture, °F Standard deviation Outlet 25 coolant tempera-	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)
111 112	ture, °F Standard deviation Outlet 26 coolant tempera-	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
112 113 113 114	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera—	(b) 9.2 0.5 66	(b) 7.9 0.5 66	(b) 8.5 0.1 65	(b) 8.3 0.4 67	(b) 8.7 0.1 66	(b) 8.8 0.4 66
114 115	ture, °F Standard deviation Wall coolant top tempera— ture, °F	0 81	1 79	0 79	1 78	0 64	0 62
115 116	Standard deviation Wall coolant middle	2 70	1 69	1 89	4 81	2 72	2 81
116 117	temperature, °F Standard deviation Wall coolant bottom	6 94	3 99	6 97	9 99	7 91	23 90
	temperature, °F	. 1	1	0	. 1	2	3

121	Wall coolant flow rate,	4.3	3.4	3.7	-	3.7	3.8
121	gai/min Standard deviation	0.3	0.3	0.1	0.2	0.1	0.1
140	Wall coolant outlet pressure, psia	16.9	30.3	22.7		20.9	16.5
140 141	Standard deviation Coolant flow rate, gal/min	4.1 (b)	6.2 (b)	0.1 (b)	5.3 (b)	0.8 (b)	1.9 (b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(p)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans- fer rate, Btu/hr	267690	266960	254790	255510	273250	298920
C26	Standard deviation	7583	3449	500	3387	12 841	5411
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate, Btu/hr	20092	16970	18256	18183	16342	16527
C28	Standard deviation	1162	635	560	929	2546	2469
C30-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	71.2	71.1	68.2	67.0	73.0	71.6
C30-1	Standard deviation	0.9	1.1	0.8	0.7	2.3	1.1
C58	Total heat transfer rate, Btu/hr	488380	450990	424180	452500	511370	524700
C58	Standard deviation	12767	18889	1983	10626	14747	9399
C30-2	Heat transfer coeffici- ent 2, Btu/hr ft ² °F	69.2	70.5	68.2	68.1	71.5	63.3
C30-2	Standard deviation	$\frac{1.1}{60.2}$	0.7	0.4	0.9	1.7	5.6
C30-3	Heat transfer coeffici- ent 3, Btu/hr ft ² °F	64.3	65.7	65.0	64.3	65.5	64.2
C30-3	Standard deviation	0.7	1.1	0.6	0.6	2.1	1.2
C30-4	Heat transfer coeffici- ent 4, Btu/hr ft ² °F	78.1	79.9	78.9	78.5	82.2	81.9
C30-4		1.1	0.6	0.7	0.7	2.9	1.8
C30-5	Heat transfer coeffici- ent 5, Btu/hr ft ² °F	81.7	83.5	80.6	79.4	83.1	83.0
C30-5	Standard deviation	1.5	0.5	0.3			1.5
C30-6	Heat transfer coeffici- ent 6, Btu/hr ft ² °F	86.4	89.0	86.8	86.1	90.7	93.1
C30-6	Standard deviation	1.2	0.4	0.8	0.7	2.6	1.2
C30-7	Heat transfer coeffici- ent 7, Btu/hr ft ² °F	19.0	63.5	62.3	59.1	(b)	(b)
C30-7	Standard deviation	26.6	1.0	0.3	0.7	(b)	(b)
C30-8	Heat transfer coeffici- ent 8, Btu/hr ft ² °F	86.6	87.9	82.6	79.6	(b)	(b)
C30-8	Standard deviation	2.4	0.6	0.2	0.7	(b)	(b)

b Data or results were not obtained.

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Table 4. - Continued

Data	Parameter					Test				
chan- nel		J1	J2	J3	J4	J5	J6	J 7	J8	J9
051 051 052	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min	2.0 0 2.4	1.9 0.1 2.2	1.9 0 2.3	1.9 0 2.3	1.8 0 2.2	1.8 0 2.2	1.8 0.1 2.2	2.1 0.2 2.4	2.0 0.1 2.3
052 077	Standard deviation Coolant inlet temperature, °F	0 66	0.1 68	0 66	0 67	0 56	0 55	0.1 56	0.2 67	0.1 66
077 078	Standard deviation Coolant inlet pressure, psia	0 61.1	1 62.2	0 60.9	0 60.9	1 48.0	0 47.9	0 47.4	1 63.6	5 59.4
078 079 079	Standard deviation Coolant flow rate, gal/min Standard deviation	0.2 2.6 0	1.8 2.4 0.1	0.2 2.4 0	0.2 2.4 0	0.6 2.3 0	1.0 2.3 0	2.3 2.3 0.1	5.8 2.5 0.2	4.4 2.4 0.1
080	Coolant outlet pressure, psia	25.1	31.4	29.4	29.4	18.3	18.2	18.1	29.7	28.1
080 081	Standard deviation Outlet 1 coolant tempera- ture, °F	0.8 101	106	0.1 109	0 113	0.1 103	0.2 103	0.3 105	3.8 107	5.3 107
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	1 114	2 117	1 121	1 129	3 112	1 114	1 122	4 119	4 124
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	2 119	3 126	1 131	1 138	3 127	2 127	2 130	5 129	5 131
083 084	Standard deviation	2 111	4 114	2 117	2 126	4 112	2 114	2 118	5 116	5 120
	Outlet 4 coolant tempera- ture, °F				1	2	2	2	5	5
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	2 123	3 129	1 133	139	129	129	129	122	125
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	1 118	4 123	2 126	2 135	4 126	2 127	3 129	5 124	5 130
086 087	Standard deviation Outlet 7 coolant tempera- ture, F	2 124	3 131	2 136	1 143	4 132	2 132	3 134	5 128	5 133
087 088	Standard deviation	2 111	4 116	2 120	2 126	4 119	2 120	3 119	5 116	5 119
088	Outlet 8 coolant tempera- ture, °F Standard deviation	1	3	1	1	3	2	2	4	5
089	Outlet 9 coolant tempera- ture, F	(b)	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)

	ture, r									
087	Standard deviation	2	4	2	2	4	2	3	5	5
880	Outlet 8 coolant tempera- ture, °F	111	116	120	126	119	120	119	116	119
880	Standard deviation	1	3	1	1	3	2	2	4	5
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)		
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, °F	(p)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
096	Outlet 16 coolant tempera- ture, F	(b)		(b)	(b)				-	
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) 1.2
096	Coolant flow rate, gal/min	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.3	1.2
096	Standard deviation	0	$0.1_{0.7}$. 0	0	0	0	0	0.1	0
097	Coolant flow rate, gal/min	10.5	9.7	9.8	9.9	9.3	9.3	9.3	10.0	9.6 0.3
097	Standard deviation	$\substack{0.1\\110}$	0.5 115	0 118	0 124	0.1 114	0.2 114	0.3 117	0.7 115	118
098	Coolant outlet tempera- ture, F			_						
098	Standard deviation	1	3	1	1	3	2	2	4	5
101	Coolant flow rate, gal/min	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.0	1.8
101	Standard deviation	0	0.1	1	0	15 0	15 1	0.1	0.2	0.1
102	Coolant outlet pressure,	14.5	14.5	15.6	14.0	15.0	15.1	14.5	15.8	15.6
102	Standard deviation	0.1	0	0.1	0.6	0.3	0.1	0.1	0.2	0.4
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

Data	Parameter					Test				
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
105	Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
105	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Outlet 22 coolant tempera- ture, °F	(в)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
108	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	Outlet 23 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
109	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Outlet 24 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
110	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
111	Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
111	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Outlet 26 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
113	Coolant flow rate, gal/min	8.9	8.2	8.4	8.4	8.0	8.0	8.0	8.6	8.2
113 114	Standard deviation Coolant outlet tempera-	0.1 67	0.4 68	0 67	0 68	0.1 58	0.1 57	0.3 57	0.7 68	0.3 67
	ture, °F									
114	Standard deviation	0	1	0	0	1	0	0	1	4
115	Wall coolant top tempera- ture, °F	75	76	88	77	86	89	82	86	80
115	Standard deviation	1	0	1	3	2	1	2	1	3
116	Wall coolant middle	93	90	105	92	82	87	78	98	102
116	temperature, °F Standard deviation	20	10	12	15	10	6	6	13	16
117	Wall coolant bottom	105	110	113	115	112	112	111	117	121
	temperature, °F	4				_	_	_		-
117	Standard deviation	2	2	1	0	O.	<u>l</u> Haringan and Aring and A	esternic reservation and services	4	2

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b Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

		(I) COILL	nueu. C	outail s	ystelli da	ια				
Data	Parameter					Test				
chan- nel		K1	К3	К4	K2	K7	К8	К6	K5	K9
051	Coolant flow rate, gal/min	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5
051	Standard deviation	0	0	0	0	0	0	0	0.1	0
052	Coolant flow rate, gal/min	2.8	2.8	2.7	2.6	2.6	2.6	2.6	2.6	2.6
052	Standard deviation	0	0	0	0	0	0	0	0.1	0
077	Coolant inlet temperature,	66	65	65	65	66	67	67	66	66
077	Standard deviation	0	0	0	0	0	0	0	1	0
078	Coolant inlet pressure, psia	62.4	62.4	62.5	62.6	62.5	62.7	63.3	64.0	63.5
078	Standard deviation	0.2	0.2	0.1	0.1	0.1	0.3	0.2	1.3	0.2
079	Coolant flow rate, gal/min	2.3	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3
079	Standard deviation	0	0	0	0	0	0	0	0.1	0
080	Coolant outlet pressure, psia	25.6	18.5	21.5	22.2	22.4	22.5	22.5	23.7	22.7
080	Standard deviation	0.6	0.5	0.5	0.1	0.1	0.1	0.1	3.3	0.1
081	Outlet 1 coolant tempera- ture, °F	97	101	101	100	100	101	105	105	103
081	Standard deviation	(b)	1	1	0	0	0	0	2	0
082	Outlet 2 coolant tempera- ture, °F	110	116	117	115	115	117	124	124	123
082	Standard deviation	1	0	1	1	0	1	1	3	0
083	Outlet 3 coolant tempera- ture, °F	112	124	123	121	121	124	131	132	133
083	Standard deviation	1	1	1	1	0	1	0	3	0
084	Outlet 4 coolant tempera-	105	$11\overline{7}$	$11\overline{8}$	$1\overline{17}$	117	$11\overline{7}$	126	126	126
084	ture, °F Standard deviation	1	1	1	0	1	1	1	3	0
085		108	111	109	110	110	109	116	112	115
	Outlet 5 coolant tempera- ture, °F									
085	Standard deviation	1	1	1	0	1	1	0	3	120
086	Outlet 6 coolant tempera- ture, °F	109	122	120	119	119	119	129	127	128
086	Standard deviation	1	1	1	1		1	0	3	0
087	Outlet 7 coolant tempera- ture, °F	108	116	117	116	116	116	122	122	121
087	Standard deviation	1	1	1	0	1	1	0	3	1
880	Outlet 8 coolant tempera- ture, °F	100	108	109	108	108	108	115	114	114
880	Standard deviation	1	1	1	0	1	1	0	2	1
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	<u>(₫)</u>	<u>,</u> (b)	(b)	(b)

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088 089	Standard deviation	1 (b)	1 (b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
009	Outlet 9 coolant tempera- ture, °F	(υ)	(0)	(0)	(0)	(6)	(1)	(6)	(5)	
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
091	Outlet 11 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)				
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Outlet 12 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
096	Outlet 16 coolant tempera- ture, °F	(b)	(b)			(b)	(b)	(b)	(b)	(b)
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5 0
096	Standard deviation	11 2	11 2	10.7	10 5	0 10.5	$0 \\ 10.5$	0 10.5	0.1 10.4	10.4
097	Coolant flow rate, gal/min	11.2	11.3 0.1	10.7 0.1	10.5 0	10.5	0.1	0.1	0.4	0
097 098	Standard deviation Coolant outlet tempera-	103	110	110	109	109	110	116	115	115
	ture, °F	_			_	_	_		•	
098	Standard deviation	1	0	1	0	0	1	0	3	0
161	Coolant flow rate, gal/min	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1
101	Standard deviation	15 1	1.5.0	15.0	15.7	16.0	15.0	15.0	$0.1_{16.0}$	16.7
102	Coolant outlet pressure,	15.1	15.0	15.2	15.7	16.0	15.9	15.9	16.0	16.7
102	Standard deviation	0.1	0.1	0.2	0.2	0.1	0	0	0.1	0.1
103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

(b)

108

(b)

(b)

Standard deviation

Outlet 8 coolant tempera-ture, °F Standard deviation

b Data or results were not obtained.

Table 4. - Continued

•	Data chan-	Parameter					Test				
	nel		K1	К3	K4	K2	K7	К8	K6	K5	К9
were conditions of the conditi	104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
one on paintage to be	104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)
And the second second	105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)
	106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
Jeografia di Salahan di	107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
FOLI	108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
OUT. 1	109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
FOLDOUT FRAME	110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
	111 112	Standard deviation Outlet 26 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
	112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 8.6 0.1 66	(b) 8.5 0.1 66	(b) 8.1 0.1 66	(b) 8.0 0 67	(b) 8.0 0 67	(b) 8.0 0 68	(b) 8.0 0 68	(b) 8.0 0.3 67	(b) 8.0 0 67
	114 115	ture, °F Standard deviation Wall coolant top tempera-	0 78	0 83	0 93	0 94	0 95	0 98	0 97	1 102	0 100
	115 116	ture, °F Standard deviation Wall coolant middle temperature, °F	4 90	3 79	1 96	1 112	1 115	1 91	0 108	2 116	1 118
	116 117	Standard deviation Wall coolant bottom	21 101	3 92	13 95	17 98	14 100	7 99	19 103	6 103	21 106
	117 120	temperature, °F Standard deviation Wall coolant total	7 73	2 73	0 75	0 75	0 76	0 76	1 77	2 7 6	1 76

73

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temperature, r

Standard deviation

Wall coolant total

117

120

b Data or results were not obtained.



Table 4. - Continued

	()			J				
Data	Parameter				Test			
chan- nel		K10	K12	K11	K14	K13	K15	K16
051	Coolant flow rate, gal/min	2.5	2.5	2.8	2.5	2.5	2.4	2.8
051	Standard deviation	0	0	0.3	0.1	0	0	0.5
052	Coolant flow rate, gal/min	2.6	2.6	2.9	2.6	2.6	2.5	2.9
052	Standard deviation	0	0	0.3	0.1	0	0	0.5
077	Coolant inlet temperature,	66	67	67	51	52	64	65
077	Standard deviation	0	0	1	5	7	0	0
078	Coolant inlet pressure, psia	63.6	63.6	74.5	53.0	53.7	59.2	70.3
078	Standard deviation	0.2	0.2	12.7	4.1	3.9	0.2	15.5
079	Coolant flow rate, gal/min	2.3	2.3	2.5	2.2	2.2	2.1	2.4
079	Standard deviation	0	0	0.2	0.1	0	0	0.4
080	Coolant outlet pressure,	22.9	22.8	26.8	14.1	14.7	21.8	23.6
	psia							
080	Standard deviation	0	0.1	5.7	6.5	4.5	0	3.1
081	Outlet 1 coolant tempera- ture, °F	105	101	105	90	86	105	101
081	Standard deviation	0	1	4	8	7	1	5
082	Outlet 2 coolant tempera- ture, °F	124	117	122	111	102	125	120
082	Standard deviation	0	1	6	9	7	1	7
083	Outlet 3 coolant tempera- ture, °F	135	126	129	119	110	134	125
	ture, °F							
083	Standard deviation	1	1	8	9	8	1	8
084	Outlet 4 coolant tempera-	127	118	122	114	105	128	120
	Outlet 4 coolant tempera- ture, °F							
084	Standard deviation	0	1	7	9	8	1	7
085	Outlet 5 coolant tempera-	117	111	112	101	98	116	109
	Outlet 5 coolant tempera- ture, °F						_	
085	Standard deviation	0	1	7	8	8	0	6
086	Outlet 6 coolant tempera- ture, °F	130	121	123	115	108	129	120
006	Standard deviation	0	1	7	9	7	0	8
086		122	116	120	107	104	122	116
087	Outlet 7 coolant tempera- ture, F	122	110	120	107	104	122	110
087	Standard deviation	0	1	6	8	7	0	7
880	Outlet 8 coolant tempera-	114	108	112	101	96	114	108
	ture, °F			_		-	2	•
088	Standard deviation	0	1	5	8	7	0	6
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000		/ LA	/£.\	/LN	/L\	/ L \	/ Ŀ\	(L\
U8 <u>9</u>	<u>Standard deviation</u>	D.)	(b)	(b)	(b)	(b)	(b)	(b)

gga - mengelight (h.	**************************************	vurтет / coorant tempera- ture, °F	122	116	120	107	104	122	116
	087	Standard deviation	0	1	6	8	7	0	7
	880	Outlet 8 coolant tempera- ture, °F	114	108	112	101	96	114	108
	088 089	Standard deviation	0 (b)	1 (b)	5 (b)	8 (b)	7 (b)	О (b)	6 (b)
		Outlet 9 coolant tempera- ture, °F							
	089 090	Standard deviation	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b)				
	090	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
	091	Outlet 11 coolant tempera- ture, °F							
	091	Standard deviation	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
	092	Outlet 12 coolant tempera- ture, °F	(b)	(p)	(b)	(b)	(D)	(n)	
	092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	095	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	096	Outlet 16 coolant tempera- ture, °F	(b)	(b)	(b)	(D)	(D)	(D)	(D)
	096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	096	Coolant flow rate, gal/min	1.5	1.5 0	1.7 0.2	1.5 0.1	1.4 0	1.4 0	1.6 0.3
	096 097	Standard deviation Coolant flow rate, gal/min	10.4	10.4	11.4	9.7	9.8	9.5	10.9
	097	Standard deviation	0	0	1.1	0.5	0.1	0	1.9
FOL	098	Coolant outlet tempera- ture, °F	116	110	113	102	97	116	110
DO	098	Standard deviation	0	1	5	8	7	0	6
Ln	101	Coolant flow rate, gal/min	2.0 0	2.1	2.4	2.1	2.1 0	2.0 0	2.4 0.5
FOLDOUT FRAME	101 102	Standard deviation Coolant outlet pressure, °F	16.6	16.3	0.3 16.5	0.1 15.8	15.9	16.4	16.6
ME	102	Standard deviation	0.1	0.1	0.2	0.3	0.1	0	0
	103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
h	103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

		\'		•	•				
	Data	Parameter				Test			
	chan- nel		K10	K12	K11	K14	К13	K15	K16
	104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
	106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
FO	107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
FOLDOUT ERAME	108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
ERAM	109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
, <u>B</u>	110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	111 112	Standard deviation Outlet 26 coolant tempera-	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)
	112 113 113	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 8.0 0	(b) 8.0 0	(b) 8.8 0.9	(b) 7.7 0.4	(b) 7.7 0.1	(b) 7.5 0	(b) 8.6 1.5
	114	Coolant outlet tempera- ture, °F	68	69	68	53	54	65	67
	114 115	Standard deviation Wall coolant top tempera- ture, °F	0 102	0 101	1 105	5 100	7 97	0 98	0 100
	115 116	Standard deviation Wall coolant middle temperature, °F	1 125	0 121	1 119	2 83	0 76	0 103	0 108
	116 117	Standard deviation Wall coolant bottom	19 109	26 107	23 102	24 98	5 96	11 109	16 106
	117	temperature, °F Standard deviation	0	1	3	4	4	2	4

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117	Standard deviation	0	1	3	4	4	2	4
120	Wall coolant total	77	78	77	63	63	75	75
1.00	temperature, °F	1	2	2	E	6	0	1
120 121	Standard deviation Wall coolant flow rate, gal/min	3.7	3.7	2 4.0	5 3.4	6 3.5	3.3	3.8
121	Standard deviation	0.3	0.3	0.4	0.2	0	0.1	0.7
140	Wall coolant outlet pressure, psia	23.6	23.6	26.8	15.9	16.8	23.9	24.2
140	Standard deviation	(5)	0 (b)	5.0 (b)	6.9 (b)	4.6 (b)	0 (b)	2.2 (b)
141 141	Coolant flow rate, gal/min Standard deviation	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans- fer rate, Btu/hr	264960	226730	267190	253120	223860	252970	245160
C26	Standard deviation	2603	5339	7730	4568	3607	1629	4390
C27	Heat extractor heat trans- fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C27 C28	Standard deviation Wall heat transfer rate, Btu/hr	(b) 19654	(b) 19571	(b) 19124	(b) 20236	(b) 19122	(b) 17641	18320
C28	Standard deviation	2988	4734	1665	1965	1711	486	1840
C30-1		51.5	50.1	53.7	49.2	46.8	48.9	47.9
					4 7		^ ^	0.0
C30-1		0.5	0.4	1.4	1.7	0.7	0.3	0.8
C30-1 C58	Standard deviation Total heat transfer rate, Btu/hr	0.5 440720	0.4 445510	638250	1.7 427750	387050	424260	405250
C58	Total heat transfer rate, Btu/hr Standard deviation	440720 3173	445510 4829	638250 26096	427750 9945	387050 5712	424260 4713	405250 8722
C58 C58 C30–2	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coeffici- ent 2, Btu/hr ft ² °F	440720 3173 58.8	445510 4829 57.0	26096 60.7	427750 9945 58.6	387050 5712 52.7	424260 4713 57.0	405250 8722 56.7
C58 C58 C30–2	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coeffici- ent 2, Btu/hr ft ² °F Standard deviation	440720 3173 58.8 0.4	445510 4829 57.0 0.4	638250 26096 60.7 0.7	427750 9945 58.6	387050 5712 52.7 0.7	424260 4713 57.0	405250 8722 56.7 0.6
C58 C58 C30–2	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F	3173 58.8 0.4 63.9	445510 4829 57.0 0.4 60.6	26096 60.7 0.7 66.6	9945 58.6 1.6 67.5	387050 5712 52.7 0.7 62.5	424260 4713 57.0 0.2 66.1	405250 8722 56.7 0.6 65.4
C58 C58 C30-2 C30-2 C30-3	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft ² °F Standard deviation Heat transfer coefficient 3, Btu/hr ft ² °F Standard deviation	440720 3173 58.8 0.4 63.9	445510 4829 57.0 0.4 60.6	638250 26096 60.7 0.7 66.6	9945 58.6 1.6 67.5	387050 5712 52.7 0.7 62.5	424260 4713 57.0 0.2 66.1 0.3	405250 8722 56.7 0.6 65.4 2.8
C58 C58 C30–2 C30–2 C30–3	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft ² °F Standard deviation Heat transfer coefficient 3, Btu/hr ft ² °F Standard deviation Heat transfer coefficient 3	3173 58.8 0.4 63.9	445510 4829 57.0 0.4 60.6	26096 60.7 0.7 66.6	9945 58.6 1.6 67.5	387050 5712 52.7 0.7 62.5	424260 4713 57.0 0.2 66.1	405250 8722 56.7 0.6 65.4
C58 C58 C30-2 C30-2 C30-3	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F	440720 3173 58.8 0.4 63.9	445510 4829 57.0 0.4 60.6	638250 26096 60.7 0.7 66.6	9945 58.6 1.6 67.5	387050 5712 52.7 0.7 62.5	424260 4713 57.0 0.2 66.1 0.3	405250 8722 56.7 0.6 65.4 2.8
C58 C58 C30-2 C30-3 C30-3 C30-4	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F	3173 58.8 0.4 63.9 0.6 68.4	445510 4829 57.0 0.4 60.6 0.9 66.1	26096 60.7 0.7 66.6 2.3 69.9	9945 58.6 1.6 67.5 1.9 68.9	387050 5712 52.7 0.7 62.5 1.1 65.2	424260 4713 57.0 0.2 66.1 0.3 68.1	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F Standard deviation Heat transfer coefficient 5, Btu/hr ft2°F Standard deviation	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9	427750 9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-6	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F Standard deviation Heat transfer coefficient 5, Btu/hr ft2°F Standard deviation Heat transfer coefficient 5, Btu/hr ft2°F Standard deviation Heat transfer coefficient 6, Btu/hr ft2°F	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5	427750 9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-6	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 3, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 4, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F Standard deviation	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7 0.5	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5	9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0 0.6	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0 0.6
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-6	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 3, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 4, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5	427750 9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-6	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 3, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 4, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 7, Btu/hr ft2 °F	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7 0.5	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5	9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0 0.6	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0 0.6
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-6 C30-6	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2°F Standard deviation Heat transfer coefficient 3, Btu/hr ft2°F Standard deviation Heat transfer coefficient 4, Btu/hr ft2°F Standard deviation Heat transfer coefficient 5, Btu/hr ft2°F Standard deviation Heat transfer coefficient 6, Btu/hr ft2°F Standard deviation Heat transfer coefficient 6, Btu/hr ft2°F Standard deviation Heat transfer coefficient 7, Btu/hr ft2°F Standard deviation Heat transfer coefficient 7, Btu/hr ft2°F Standard deviation Heat transfer coefficient	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5 0.5 65.0	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7 0.5 62.4	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5 1.8 66.5	427750 9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3 1.9 66.5	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6 1.0 62.6	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0 0.6 64.5	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0 0.6 62.7
C58 C58 C30-2 C30-3 C30-3 C30-4 C30-4 C30-5 C30-5 C30-6 C30-6 C30-7	Total heat transfer rate, Btu/hr Standard deviation Heat transfer coefficient 2, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 3, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 4, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 5, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 6, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 7, Btu/hr ft2 °F Standard deviation Heat transfer coefficient 8, Btu/hr ft2 °F	440720 3173 58.8 0.4 63.9 0.6 68.4 0.7 65.1 0.7 77.5 0.5 65.0	445510 4829 57.0 0.4 60.6 0.9 66.1 0.9 63.1 0.6 73.7 0.5 62.4 0.4	638250 26096 60.7 0.7 66.6 2.3 69.9 2.1 64.9 2.7 76.5 1.8 66.5	427750 9945 58.6 1.6 67.5 1.9 68.9 2.3 64.3 1.6 78.3 1.9 66.5	387050 5712 52.7 0.7 62.5 1.1 65.2 1.0 63.9 1.3 74.6 1.0 62.6 0.8	424260 4713 57.0 0.2 66.1 0.3 68.1 0.3 62.9 0.6 75.0 0.6 64.5	405250 8722 56.7 0.6 65.4 2.8 67.8 2.8 62.3 1.3 74.0 0.6 62.7 0.8

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

1 2 (12)

Table 4. - Continued

(f) Continued. Coolant system data

		(1) 0011011114041	000.0	J 0 0 0 a	. • •		
	Data	Parameter			Test		
	chan- nel		CAS0	CAS1	CAS2	CAS3	CAS4
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	1.6 0 1.2 0 58	2.8 0 2.8 0 62	1.5 0.1 1.1 0.1 54	(b) (b) (b) (b) 59	(b) (b) (b) (b) 62
	077 078	Standard deviation Coolant inlet pressure, psia	2 61.8	0 61.6	3 66.6	61.9	7 62.3
	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, psia	0.6 1.5 0 26.9	2.4 2.5 0.1 25.4	7.2 1.5 0.1 33.1	0.5 (b) (b) 32.6	3.4 (b) (b) 30.8
	080 081	Standard deviation Outlet 1 coolant tempera- ture, °F	3.0 104	2.6 93	5.3 96	0.7 (b)	2.2 (b)
i	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	6 103	5 117	4 107	(b)	(b)
•	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	6 105	6 137	5 110	(b)	(b)
	083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	6 97	10 126	4 101	(b) (b)	(b)
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	6 (b)	8 113	4 (b)	(b) (b)	(b)
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) (b)	8 120	(b) (b)	(b) (b)	(b) (b)
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	8 117	(d) (d)	(b) (b)	(b)
	087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) (b)	8 107	(b)	(b) (b)	(b)
	088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b) (b)	6 (b)	(b) (b)	(b) (b)	(b) (b)
	089	Standard deviation	(b)	(b)	(ġ)	(b)	(b)

086 087	Standard deviation Outlet 7 coolant tempera-	(b) (b)	8 117	(b) (b)	(b) (b)	(b) (b)
087 088	ture, °F Standard deviation Outlet 8 coolant tempera-	(b) (b)	8 107	(b) (b)	(b)	(b) (b)
088 089	ture, F Standard deviation Outlet 9 coolant tempera-	(b)	6 (b)	(b)	(b)	(b)
089 090	ture, °F Standard deviation Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)
090 091	Standard deviation Outlet 11 coolant tempera-	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
091 092	ture, °F Standard deviation Outlet 12 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)
092 093	Standard deviation Outlet 13 coolant tempera- ture, F	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
093 094	Standard deviation Outlet 14 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
094 095	Standard deviation Outlet 15 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b) (b)
095 096	ture, F Standard deviation Outlet 16 coolant tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
096 096 096 097 097 098	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) (b) (b) 8.3 0.5 87	(b) 1.6 0 10.7 0.1 112	(b) (b) (b) 8.0 0.5 88	(b) (b) (b) 6.2 0.1 60	(b) (b) (b) 6.5 0.4 63
098 101 101 102	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	3 2.4 0 12.5	7 1.4 0.1 15.4	4 1.4 0.1 13.9	1 (b) (b) 12.6	7 (b) (b) 14.0
102 103	°F Standard deviation Outlet 17 coolant tempera—	0.3 (b)	2.5 (b)	0.3 (b)	0.6 (b)	1.6 (b)
103	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)

 $^{^{,\,\,}b}$ Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

	(f) Continued.	Coolant	system a	ata		
Data chan-	Parameter			Test		
nel		CAS0	CAS1	CAS2	CAS3	CAS4
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera-	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
106 107	ture, °F Standard deviation Outlet 21 coolant tempera-	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
107 108	ture, F Standard deviation Outlet 22 coolant temperature, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
108 109	ture, F Standard deviation Outlet 23 coolant temperature, F	(b) (a)	(b) (a)	(b) (a)	(b) (a)	(b) (a)
109 110	Standard deviation Outlet 24 coolant tempera—	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
110 111	ture, °F Standard deviation Outlet 25 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
111 112	ture, °F Standard deviation Outlet 26 coolant tempera-	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
112 113 113 114	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 8.7 0.1 60	(b) 8.7 0.1 63	(b) 8.5 0.5 56	(b) 8.3 0.1 60	(b) 7.9 0.5 63
114 114 115	Coolant outlet tempera- ture, °F Standard deviation Wall coolant top tempera-	2 92	0 96	3 103	1 94	7 101
115 116	ture, °F Standard deviation Wall coolant middle	10 94	11 105	7 101	13 99	13 103
116 117	temperature, °F Standard deviation Wall coolant bottom	20 98	27 95	21 102	26 112	20 107
117 120	temperature, °F Standard deviation Wall coolant total	11 60	9 63	6 56	11 60	13 63
120 121	temperature, °F Standard deviation Wall coolant flow rate,	2 3 . 6	0 3.6	3 3.6	2 3. 5	7 3.8

120	Wall coolant total temperature, °F	60	63	56	60	63
120	Standard deviation	2	0	3	2	7
121	Wall coolant flow rate, gal/min	3.6	3.6	3.6	3.5	3.8
121	Standard deviation	0.1	0.2	0.2	0.2	0.3
140	Wall coolant outlet	19.1	19.3	26.8	23.1	21.2
1 40	pressure, psia	1 6	2.7	E 0	1 0	3.3
140 141	Standard deviation	1.5 1.5	(b)	5.0 (b)	1.0 (b)	
141	Coolant flow rate, gal/min Standard deviation	0	(b)	(b)	(b)	(b) (b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)
_,,	psia	(-/	, - <i>,</i>	Y /	7 3	ζ-,
145	Standard deviation	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans-		270090		9004	8821
	fer rate, Btu/hr					
C26	Standard deviation	12678	36785	7128	1905	2478
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)
007	fer rate, Btu/hr	(1.)	753	/± \	/ L \	/ 1. 1
C27 C28	Standard deviation	(b) 17218	(b) 15813	(b) 21757	(b) 22856	(b) 23523
U20	Wall heat transfer rate, Btu/hr	1/210	13013	21/3/	22000	23323
C28	Standard deviation	3803	4910	3444	5429	5131
C30-1	Heat transfer coeffici-	28.4	63.1	34.9	(b)	(b)
	ent 1, Btu/hr ft ² °F					·
C30-1	Standard deviation	2.1	3.0	1.6	(b)	(b)
C58	Total heat transfer rate,	310480	352160	206340	75331	76107
0.00	Btu/hr	45217	46259	7105	10940	10102
C58 C30-2	Standard deviation Heat transfer coeffici-	32.0	62.8	35.3	(b)	(b)
030-2	ent 2, Btu/hr ft ² °F	32.0	02.0	33.3	(5)	(5)
C30-2		1.4	1.9	1.5	(b)	(b)
C30-3	Heat transfer coeffici-	22.2	81.0	25.5	(b)	(b)
	ent 3, Btu/hr ft ² °F					
C30-3		1.3	3.6	0.8	(b)	(b)
C30-4		41.2	89.7	44.1	(b)	(b)
C20 4	ent 4, Btu/hr ft ² °F	5 0	лл	1 /	(b.)	/h\
C30-4 C30-5	Standard deviation Heat transfer coeffici-	5.0 (b)	4.4 76.1	1.4 (b)	(b) (b)	(b) (b)
C30-3	ent 5, Btu/hr ft ² °F	(0)	70.1	(D)	(5)	(0)
C30-5	Standard deviation	(b)	6.9	(b)	(b)	(b)
C30-6	Heat transfer coeffici-	(b)	81.9	(b) (b)	(b)	(b)
	ent 6, Btu/hr ft ² °F	• •			• •	
C30-6	Standard deviation	(b)	5.7	(b)	(b)	(b)
C30-7	Heat transfer coeffici-	(b)	66.7	(b)	(b)	(b)
000 7	ent 7, Btu/hr ft ² °F	/ L \	4.0	/ L \	/1. \	(1.)
C30-7	Standard deviation	(b) (b)	4.8 77.1	(b) (b)	(b) (b)	(b)
C30-8	Heat transfer coeffici- ent 8, Btu/hr ft ² °F	(u)	//.1	(0)	(u)	(b)
C30-8	Standard deviation	(b)	5.4	(b)	(b)	(b)
300 0		(5)	· · ·	(5)	(~)	(5)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

(f) Continued. Coolant system data

	(1)	continued.	60016	ant syste	iii uaca				
Data	Parameter		Test						
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
051	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	2.7	2.8
051	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	0.1	0.1
052	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	2.4	2.8
052	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	0.1	0.1
077	Coolant inlet temperature,	69	72	69	74	70	67	66	65
077	F Standard deviation Coolant inlet pressure, psia	2	2	2	2	4	2	1	0
078		80.6	80.2	82.4	82 . 1	76.3	65 . 9	62.5	62.1
078	Standard deviation	9.8	4.6	0.5	0.5	7.5	7.3	1.7	3.1
079	Coolant flow rate, gal/min	(b)	(b)	(b)	2.7	2.6	2.4	2.5	2.5
079	Standard deviation	(b)	(b)	(b)	0.5	0.3	0.3	0.1	0.1
080	Coolant outlet pressure,	33.3	31.8	36.8	45.1	32.2	31.2	26.6	27.1
080	psia Standard deviation Outlet 1 coolant tempera- ture, °F	3.0	0.2	13.5	0	6 . 6	5.6	4.1	2.1
081		74	75	73	92	87	83	107	101
081	Standard deviation Outlet 2 coolant tempera- ture, °F	5	4	6	5	5	8	7	9
082		77	77	76	107	107	102	121	113
082	Standard deviation Outlet 3 coolant tempera- ture, °F	8	5	11	9	10	16	9	12
083		77	77	76	114	111	108	124	123
083	Standard deviation Outlet 4 coolant tempera- ture, °F	8	5	12	11	10	20	10	16
084		75	76	76	123	118	115	114	115
084	Standard deviation Outlet 5 coolant tempera- ture, °F	5	4	13	13	11	23	8	13
085		(b)	(b)	(b)	(b)	(b)	(b)	111	109
085	Standard deviation Outlet 6 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	7	13
086		78	77	77	113	111	98	119	116
086	Standard deviation Outlet 7 coolant temperature, F	8	5	12	11	10	15	9	14
087		(b)	(b)	(b)	(b)	(b)	(b)	131	114
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	10 117	14 105
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	8 (b)	11 (b)
089 090	Standard deviation Outlet 10 coolant temperature, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

V00	ture, °F	(D) ***	(p)	(b)	(b)	(D)	(b)	11/	105
088 089	Standard deviation Outlet 9 coolant tempera- ture, F	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	8 (b)	11 (b)
089 090	Standard deviation Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
090 091	Standard deviation Outlet 11 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)
091 092	ture, °F Standard deviation Outlet 12 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
092 093	Standard deviation Outlet 13 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093 094	Standard deviation Outlet 14 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
094 095	Standard deviation Outlet 15 coolant tempera—	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
095 096	ture, F Standard deviation Outlet 16 coolant tempera- ture, F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
096 096 096 097 097 098	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 0.1 0.1 2.5 0.4 71	(b) 0.1 0.1 2.4 0.1 75	(b) 0.9 0.8 2.9 1.1	(b) 1.2 0 6.6 0.1 108	(b) 1.0 0.1 6.2 0.7 106	(b) 1.1 0.1 5.4 0.6 100	(b) 1.3 0.1 10.7 0.4 113	(b) 1.6 0 10.9 0.2 107
098 101 101 102	ture, °F Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure, °F	2 0.1 0 (b)	0.1 0 (b)	10 0.4 0.7 (b)	9 2.7 0 (b)	9 2.5 0.3 (b)	15 2.4 0.3 12.3	8 2.2 0.1 15.0	12 2.2 0.1 15.0
102 103	Standard deviation Outlet 17 coolant tempera-	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	0.5 (b)	0.6 (b)	1.1 (b)
103	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}rm b}$ Data or results were not obtained.

Table 4. - Continued

Data	Parameter				-	Гest			
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
104	Outlet 18 coolant tempera- ture, °F	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
106	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107	Outlet 21 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
108 109	Standard deviation Outlet 23 coolant tempera-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
109 110	ture, °F Standard deviation Outlet 24 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
110 111	ture, °F Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
111	Outlet 25 coolant tempera- ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112	Outlet 26 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
112 113	Standard deviation Coolant flow rate, gal/min	(b) 9.1	(b) 9.2	(b) 9.1	(b) 9.1 0.1	(b) 9.4 1.1	(b) 9.4 1.0	(b) 8.8 0.3	(b) 8.5 0.2
113 114	Standard deviation Coolant outlet tempera- ture, °F	1.0 70	0.5 73	0 70	74	71	68	67	66
114 115	Standard deviation Wall coolant top tempera-	2 91	2 91	2 94	2 97	4 93	2 80	1 84	0 88
115 116	ture, °F Standard deviation Wall coolant middle	10 89	8 104	13 94	6 96	10 98	6 81	8 96	8 100
116 117	temperature, °F Standard deviation Wall coolant bottom	20 113	25 115	22 90	12 97	27 97	14 93	27 91	25 88
117	temperature, °F Standard deviation	15	11	7	4	8	8	4 75	6 73
120 120	Wall coolant total temperature, °F Standard deviation	81 5	86 4	80 3	85 3	85 4	75 3	75 2	
121	Wall coolant flow rate,	2.3	2.3	3.3	3.0	2.6	3.3	4.1^{-}	2 3.9

	temperature, °F		•				, 0	, 0	
120	Standard deviation	5	4	3	3	4	3	2	2
121	Wall coolant flow rate, gal/min	2.3	2.3	3.3	3.0	2.6	3.3	4.1	3.9
121	Standard deviation	0.3	0.2	0.3	0.2	0.5	0.9	0.2	0.1
140	Wall coolant outlet pressure, psia	29.5	30.5	30.5	30.7	27.8	27.8	21.1	20.1
140	Standard deviation	2.6	0.3	0.2	0.1	6.9	5.8	4.6	1.9
141	Coolant flow rate, gal/min	(p)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(p)	(b)	(b)	(b)	(b)	(b)	(p)	(p)
145	Coolant outlet pressure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	heat exchanger heat trans-	6996	7085	15345	117220	113700	89541	255560	231980
	fer rate, Btu/hr								
C26	Standard deviation	2580	2052	29395	30284	22969	40715	36923	63043
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
007	fer rate, Btu/hr	/	/: \	41.3	71.3	4. \	(1.)	/ ()	763
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate, Btu/hr	13611	15927	17281	17363	18337	13145	18953	15020
C28	Standard deviation	4135	4048	5529	1979	3899	5392	4647	4169
C30-1	Heat transfer coeffici- ent 1, Btu/hr ft ² °F	(b)	(p)	(b)	61.6	63.1	50.9	59.9	56.3
C30-1	Standard deviation	(b)	(b)	(b)	18.3	6.8	14.7	6.4	9.7
C58	Total heat transfer rate, Btu/hr	126090	49378	66106	163440	166590	152780	347530	304610
C58	Standard deviation	60425	12074	37407	36374	26597	57870	45169	77994
C30-2	Heat transfer coeffici-	(b)	(b)	(b)	40.7	43.4	44.9	63.6	59.1
	ent 2, Btu/hr ft ² °F								
C30-2	Standard deviation	(b)	(b)	(b)	12.3	5.2	14.2	6.8	10.1
C30-3	Heat transfer coeffici-	(b)	(b)	(b)	64.2	59.8	68.3	56.6	60.8
000 0	ent 3, Btu/hr ft ² °F	(1.)	(1.)	/1. \	100	c -	10.0	с г	10 г
C30-3	Standard deviation	(b)	(b)	(b)	14.4	6.5	19.2	6.5	10.5
C30-4	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	60.0	64.5	67.3
0.20 4	ent 4, Btu/hr ft ² °F	<i>(</i>	/ L \	/L\	(5)	/h\	17 7	7 6	12.3
C30-4	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	17.7 (b)	7.6 64.6	68.4
C30-5	Heat transfer coeffici-	(D)	(0)	(n)	(n)	(0)	(0)	04.0	00.4
C 20 E	ent 5, Btu/hr ft ² °F Standard deviation	(6)	(6)	(6)	(6)	/ b)	(b)	6.4	13.4
C30-5 C30-6	Heat transfer coeffici-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	71.8	74.3
C3U-0	ent 6, Btu/hr ft ² °F	(0)	(n)	(n)	(0)	(0)	(0)	/1.0	74.5
C30-6	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	7.3	13.7
C30-7	Heat transfer coeffici-	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	66.4	60.8
C30-7	ent 7, Btu/hr ft ² °F	(1)	(0)	(1)	(0)	(0)	(0)	00.4	00.0
C30-7	Standard deviation	(b)	(h)	(h)	(h)	(h)	(b)	5.5	11.0
C30-8	Heat transfer coeffici-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	80.2	70.6
555 5	ent 8, Btu/hr ft ² °F	(5)	(5)	(~)	(-)	(~)	(-)	20.4	
C30-8	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	7.4	13.0
•		\- <i>/</i>	\- <i>'</i>	(-)	\- <i>'</i>	\- /	\- <i>\</i>		

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

			` '			•				
	Data	Parameter				Test	;			
	chan- nel		L1	L2	L3	L4	L5	L6	M1	M2
	051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	2.9 0.3 2.6 0.1 66	2.5 0 2.4 0 64	2.9 0.2 2.6 0.1 66	3.0 0 2.4 0.7 66	2.6 0.2 2.4 0.2 65	2.9 0 2.7 0 65	(b) (b) (b) (b) 65	(b) (b) (b) (b) 65
	977 978	Standard deviation Coolant inlet pressure, psia	0 70.0	1 62.3	0 73.8	0 75.5	1 67.2	0 75.7	0 75 . 9	0 70.3
	078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	6.3 3.0 0.3 25.4	0.3 2.6 0.1 27.2	4.5 3.0 0.2 27.4	0.2 3.2 0 26.2	6.0 2.8 0.2 28.1	0.2 3.1 0 25.2	0.2 (b) (b) 22.1	6.6 (b) (b) 24.3
	080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	1.7 106	1.2 102	1.3 108	0.2 110	3.0 117	0.1 105	1.3 (b)	1.1 (b)
	081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	5 108	2 106	3 110	1 112	4 119	0 105	(b) (b)	(b)
	082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	5 118	1 115	3 122	1 125	5 133	0 118	(b) (b)	(b)
	083 084	Standard deviation Outlet 4 coolant tempera- ture, F	6 100	2 ··· 98	4 102	2 103	6 108	0 99	(b)	(b)
	084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	4 106	1 104	2 107	1 110	3 114	0 104	(b) (b)	(b)
	085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	4 112	1 112	3 115	1 115	3 123	0 110	(b) (b)	(b)
	086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	6 110	1 111	4 114	1 115	5 121	1 110	(b) (b)	(b) (b)
	087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	5 102	2 101	3 104	1 106	4 111	1 101	(b)	(b)
	088 089	Standard deviation Outlet 9 coolant temperature, °F	4 (b)	1 (b)	3 (b)	1 (b)	4 (b)	0 (b)	(b) (b)	(b) (b)
	089 090	Standard deviation Outlet 10 coolant temperature, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)
risca	090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

ene casheadillatines in cons	- entered manufacture and or expensive all a particular securities and securities are securities and securities are securities and securities are securities and securities are securities and securities							· · · · · · · · · · · · · · · · · · ·	/-/
088	ture, °F Standard deviation	4	1	3	1	4	0	(b)	(b)
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F			(-/	(-)	(-,	V-7	(- /	
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
090	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(h)
091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
	ture, °F		4. 3					<i>(</i> ,)	
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
092	Outlet 12 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13_coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
002	ture, °F	(6)	(5)	/ b.\	(/61	(b)	(b)	(b)
093 094	Standard deviation Outlet 14 coolant tempera—	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
,034	ture, °F	(0)	(1)	(6)	(1)	(5)	(5)	(5)	(5)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
00.5	ture, °F	(b)	(b.)	(b)	(b.)	(5)	(b)	(b)	(b)
095 096	Standard deviation Outlet 16 coolant tempera-	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
030	ture, F	• •	• •			, ,	, ,		, -
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
096	Coolant flow rate, gal/min	1.3 0.1	1.2	$\begin{array}{c} 1.4 \\ 0.1 \end{array}$	1.4	1.2 0.1	1.4 0	(b) (b)	(b)
096 097	Standard deviation Coolant flow rate, gal/min	12.1	0 10.6	12.3	0 12.7	11.3	12.8	5.3	4.8
097	Standard deviation	1.1	0.2	0.8	0.1	1.1	0	0.1	0.4
098	Coolant outlet tempera- ture, °F	104	103	107	108	114	103	66	66
098	Standard deviation	4	1	3	1	4	0	0	0
101	Coolant flow rate, gal/min	2.7	2.3	2.7	2.8	2.4	2.8	(b)	(b)
101 102	Standard deviation Coolant outlet pressure,	0.3 18.1	0.1 18.9	0.2 19.2	0 18.6	0.2 16.8	$0 \\ 16.1$	(b) 17.0	(b) 13.8
102	°F	10.1	10.9	13.2	10.0	10.0	10.1	17.0	13.0
102	Standard deviation	1.5	0.7	0.9	1.1	0.3	0.3	0.6	0.2
103	Outlet 17 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
102	ture, °F	/ 5.1	(5)	(b.)	(5)	(b)	(b)	(b)	(b)
103	Standard deviation	(b)	(b)	(b)	(b)	(0)	(n)	(0)	(n)

b Data or results were not obtained.

Table 4. - Continued

Data	Parameter				Tes ⁻	t			
chan- nel		L1	L2	L3	L4	L5	L6	M1	M2
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
105 106	Standard deviation Outlet 20 coolant tempera- ture, F	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera-	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
107 108	ture, °F Standard deviation Outlet 22_coolant tempera-	(p). (p)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)
108 109	ture, °F Standard deviation Outlet 23_coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)
109 110	ture, °F Standard deviation Outlet 24 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
110 111	ture, °F Standard deviation Outlet 25_coolant tempera-	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
111 112	ture, °F Standard deviation Outlet 26_coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
112 113 113	ture, °F Standard deviation Coolant flow rate, gal/min	(b) 9.4 0.8	(b) 8.4 0.1	(b) 9.7 0.6	(b) 10.0 0.1	(b) 8.8 0.8	(b) 10.0 0	(b) 9.8 0.1	(b) 9.0 0.8
113	Standard deviation Coolant outlet tempera- ture, °F	67	66	68	67	67	66	66	66 66
114 115	Standard deviation Wall coolant top tempera- ture, °F	0 91	1 98	0 109	0 110	1 87	0 96	0 107	0 77
115 116	Standard deviation Wall coolant middle temperature, °F	10 100	4 106	3 101	3 93	8 104	3 84	3 103	4 96
116 117	Standard deviation Wall coolant bottom temperature, °F	24 11 ₋ 7	17 133	18 133	6 136	24 139	5 138	19 114	9 118
117 120	Standard deviation Wall coolant total	11 75 .	1 74	2 76	3 77	3 76	1 74	3 75	4 74
120	temperature, °F Standard deviation	2	1	1	1	2	0	1	0

	temperature, °F			• •		, -			
120	Standard deviation	2	1	1	1	2	0	1	0
121	Wall coolant flow rate, gal/min	4.0	3.5	4.1	4.3	3.7	4.2	4.4	4.1
121	Standard deviation	0.5	0.1	0.3	0.1	0.4	0	0.1	0.3
140	Wall coolant outlet pressure, psia	16.4	19.4	18.3	16.7	19.9	15.3	17.1	20.2
140	Standard deviation	2.9	1.4	1.9	0.1	3.8	0.1	1.4	1.8
141	Coolant flow rate, gal/min	(b)	(p)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(p)	(p)	(p)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans-	234830	210570	252930	273630	275610	250940	8793	5183
	fer rate, Btu/hr								
C26	Standard deviation	9649	7782	5068	7459	5015	2472	961	1237
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	fer rate, Btu/hr						4. 3	4. 3	4.)
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	17387	17315	19826	23091	19015	18293	21132	18358
	Btu/hr	2614	1000	0567	1770	2001	215	0040	1020
C28	Standard deviation	3614	1389	2567	1778	3291	315	2249	1038
C30-1	Heat transfer coeffici-	67.2	54.9	65.6	73.7	75.6	65.3	(b)	(b)
C30-1	ent 1, Btu/hr ft ² °F Standard deviation	2.3	3.9	1.3	2.5	1.3	0.5	(b)	(b)
C58	Total heat transfer rate,	313770	249580	310690	390170	383350	304920	68463	42273
000	Btu/hr	0-0							
C58	Standard deviation	11167	10412	8103	4993	14629	3738	1973	1187
C30-2	Heat transfer coeffici-	68.4	59.1	67.7	75.7	77.9	63.5	(b)	(b)
	ent 2, Btu/hr ft ² °F								, ,
C30-2	Standard deviation	2.7	2.2	1.1	2.2	1.9	0.5	(b)	(b)
C30-3	Heat transfer coeffici-	54.5	44.7	53.0	57.7	57.2	52.0	(b)	(b)
	ent 3, Btu/hr ft ² °F	1 .		•	0.6	1.0	0.0	/. \	(1.)
C30-3		1.3	2.1	0.9	0.8	1.2	0.2	(b)	(b)
C30-4	Heat transfer coeffici-	75.4	61.3	74.1	83.1	82.9	74.8	(b)	(p)
C20 4	ent 4, Btu/hr ft ² °F	1.6	3.1	1.4	1.6	1.0	0.4	(b)	(b)
C30-4	Standard deviation Heat transfer coeffici-	68.9	59.0	65.9	73.1	73.4	63.1	(b)	(b)
030-5	ent 5, Btu/hr ft ² °F	00.9	33.0	03.9	/5.1	75.4	00.1	(6)	(5)
C30-5	Standard deviation	1.6	2.3	0.8	1.2	1.0	1.0	(b)	(b)
C30-6	Heat transfer coeffici-	69.1	61.3	67.6	72.2	74.8	62.9	(b)	(b)
000 0	ent 6, Btu/hr ft ² °F	0311	01.0	0, 10	, _ • •	, ,,,,	02.0	(2)	(-)
C30-6	Standard deviation	2.0	1.8	0.8	1.2	1.1	0.9	(b)	(b)
C30-7	Heat transfer coeffici-	52.1	49.0	51.7	50.6	59.4	50.1	(b)	(b)
,	ent 7, Btu/hr ft ² °F							` '	` ,
C30-7	Standard deviation	3.5	1.8	2.5	15.1	1.8	0.3	(b)	(b)
C30-8	Heat transfer coeffici-	63.7	60.7	63.3	61.7	71.6	61.0	(b)	(b)
	ent 8, Btu/hr ft ² °F								
C30-8	Standard deviation	3.8	1.4	2.6	18.4	1.9	0.3	(b)	(b)

b Data or results were not obtained.

Table 4. – Continued

Data	Parameter					Test				
chan- nel		М3	M4	M5	М6	М7	M8	M9	M11	M12
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 64	(b) (b) (b) (b) 65	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (63	(b) (b) (b) (b) 59	(b) (b) (b) (b) 62	(b) (b) (b) (b) 62	(b) (b) (b) (b) 62
077 078	°F Standard deviation Coolant inlet pressure, psia	1 62.7	0 75.6	1 66.5	0 61.9	0 65.7	8 66.6	0 61.2	0 62.0	0 61.9
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	1.3 (b) (b) 27.3	17.8 (b) (b) 26.5	6.6 (b) (b) 25.5	0.2 (b) (b) 26.4	11.9 (b) (b) 26.8	14.7 (b) (b) 25.3	1.8 (b) (b) 26.5	0.3 (b) (b) 26.4	0.2 (b) (b) 26.5
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	3.3 (b)	3.0 (b)	1.1 (b)	0.1 (b)	0.9 (b)	3.5 (b)	0.2 (b)	0 (b)	(b)
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
089 090	Standard deviation Outlet 10 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)-	(b)	(b)	(b)	(b)	(b)

088	Outlet 8 coolant tempera- ture, °F	(b)								
880	Standard deviation	(b)								
089	Outlet 9 coolant tempera- ture, °F	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)								
090	Outlet 10 coolant tempera- ture, °F	(b)	(p)	(b)						
090	Standard deviation	(b)	(b) (b)	(b) (b)						
091	Outlet 11 coolant tempera- ture, °F	(b)	(0)	(0)						
091	Standard deviation	(b)								
092	Outlet 12 coolant tempera- ture, F	(b)								
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
093	Standard deviation	(b)								
094	Outlet 14 coolant tempera- ture, °F	(b)								
094	Standard deviation	(b)	(b) (b)							
095	Outlet 15 coolant tempera- ture, °F	(b)								
095	Standard deviation	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)
096	Outlet 16 coolant tempera- ture, °F	(b)	(D)	(b)	(b)	(D)	(0)	(0)	(n)	
096	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
096 096	Coolant flow rate, gal/min Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
097	Coolant flow rate, gal/min	(b)								
097 098	Standard deviation	(b) (a)								
	Coolant outlet tempera- ture, °F				·			• •		
098 101	Standard deviation	(b) (b)								
101	Coolant flow rate, gal/min Standard deviation	(b)								
102	Coolant outlet pressure,	13.9	13.2	14.1	13.5	13.8	13.3	14.8	14.9	14.9
102	Standard deviation	0.2	3.2	0.2	0.2	0.1	0.3	0.3	0	0.3
103	Outlet 17 coolant tempera- ture, °F	(a)								
103	Standard deviation	(b)								

b Data or results were not obtained.

Table 4. - Continued

Data	Parameter					Test				
chan- nel		М3	M4	M5	M6	M7	M8	M9	M11	M12
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
105 106	Standard deviation Outlet 20 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
112 113 113 114	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet tempera-	(b) 7.9 0.3 65	(b) 9.3 1.7 66	(b) 8.5 0.8 65	(b) 7.9 0 64	(b) 8.2 1.0 64	(b) 8.4 1.3 60	(b) 7.7 0.2 63	(b) 7.9 0 64	(b) 7.9 0 63
114 115	ture, °F Standard deviation Wall coolant top tempera-	1 89	0 98	1 98	0 85	0 90	7 83	0 101	0 103	0 88
115 116	ture, F Standard deviation Wall coolant middle temperature, F	1 96	3 103	2 120	4 106	2 111	6 89	2 84	0 89	4 110
116 117	Standard deviation Wall coolant bottom temperature, °F	15 132	17 131	29 135	18 138	15 131	6 124	6 133	12 138	20 142
117 120	Standard deviation Wall coolant total temperature, °F	3 76	8 76	4 77	0 76	6 74	7 70	1 74	3 74	0 75
120	Standard deviation	1 maranes Antis Especia	1	2	1	1	7	0 3.4	0 3.4	1 3.4

3	temperature, F		The second secon	- training to the state of the	- acts of the control of the	and de Saldana - marie and marie and a marie a		estinente estaturas, art matitires dibien	Salada Melakaran dan mana Bar	an Addition line Lines and
116	Standard deviation	15	17	29	18	15	6	6	12	20
117	Wall coolant bottom	132	131	135	138	131	124	133	138	142
	temperature, °F									
117	Standard deviation	3	8	4	0	6	7	1	3	0
120	Wall coolant total	76	76	77	76	74	70	74	74	75
	temperature, °F									
120	Standard deviation	1	1	2	1	1	7	0	0	1
121	Wall coolant flow rate,	3.5	4.1	3.8	3.4	3.6	3.7	3.4	3.4	3.4
	gal/min									
121	Standard deviation	0.2	0.7	0.4	0.2	0.5	0.6	0.1	0.1	0.2
140	Wall coolant outlet	24.2	22.0	21.7	23.1	23.1	21.5	23.4	23.2	23.3
	pressure, psia								_	_
140	Standard deviation	3.5	3.2	1.8	0	0.1	3.3	0.3	0	0
141	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C26	Heat exchanger heat trans-	6151	7177	7193	6208	6172	5848	7 9 15	8Ì18	8657
020	fer rate, Btu/hr	0_0_		, _ , _ ,	•					
C26	Standard deviation	951	839	555	882	626	1223	820	684	797
C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
QL,	fer rate, Btu/hr	(2)	(2)	(-)	(-/	(~)	ν-,	\ - <i>\</i>	, ,	·
C27	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C28	Wall heat transfer rate,	19938	22433	24252	20912	20687	19356	19678	20536	22543
	Btu/hr									
C28	Standard deviation	1984	1548	4984	1746	2207	1958	477	571	2044
C30-1	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ent 1, Btu/hr ft ² °F							4	4. 3	4. 3
C30-1	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C58	Total heat transfer rate,	54658	97004	98615	54559	40338	56410	63962	62490	102950
	Btu/hr								1 1 7 1	1005
C58	Standard deviation	2764	3138	3653	3790	2667	8455	4404	1171	4895
C30-2	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000 0	ent 2, Btu/hr ft ² °F	(1.)	/	/1.3	/1.\	/ \	/ \	71.3	71.3	763
C30-2	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C30-3	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
000 0	ent 3, Btu/hr ft ² °F	71.5	(1.)	71.3	71.3	71.3	/ 1 \	(1.3	/1.3	/ L N
C30-3	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

Table 4. - Continued

(f)	Continued.	Coolant	system	data
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Data	Parameter	Test										
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7			
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (b) 67	(b) (b) (b) (b) 68	(b) (b) (b) (b) 68	(b) (b) (b) (b) 67	(b) (b) (b) (b) 68	(b) (b) (b) (b) 65	(b) (b) (b) (b) 68	(b) (b) (b) (b) 66			
077 078	Standard deviation Coolant inlet pressure, psia	0 73.0	3 70 . 0	0 75.7	1 73.4	3 66.8	1 77 . 5	3 72 . 8	0 75.8			
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	5.7 (b) (b) 14.6	6.0 (b) (b) 14.5	0.2 (b) (b) 14.5	8.1 (b) (b) 14.4	4.6 (b) (b) 14.3	5.2 (b) (b) 14.0	3.5 (b) (b) 14.0	0.2 (b) (b) 14.1			
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	0 (b)	(b)	(b)	0.1 (b)	0.1 (b)	(p)	(b)	0 (b)			
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)			
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)			
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)			
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)			
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)			
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)			
087 088	Standard deviation Outlet 8 coolant tempera- ture, F	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)			
088 089	Standard deviation Outlet 9 coolant tempera- ture, F	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)			
089 090	Standard deviation Outlet 10 coolant tempera- ture, °F	(b)	(b) (b)									

त्वश्राहरून्विकारी व्यक्ति स्थलः । .	~ voo	ture, F	(0)	(0)	(D)	(a)	(D)	(n)	(n)	(n)
	000	ture, F	(1.)	/1 \	(1.)	(1.)	75.	71.3	/ L \	/ L\
	088 089	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	089	Outlet 9 coolant tempera- ture, °F	(0)	(n)	(0)	(n)	(n)	(D)	(D)	(0)
	089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, °F								
	090	Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
	091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
	091	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	092	Outlet 12 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	032	ture, °F	(6)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
	092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	093	Outlet 13 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, F	4. 3	4. 3				/ · · ·	7. 3	/
	093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	094	Outlet 14 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	095	Outlet 15 coolant tempera- ture, F	(b)	(b)	(b)	(b)	(b)	(þ)	(b)	(b)
	095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
।	096	Outlet 16 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
ĝ	006	ture, t	(b)	/ b\	/L\	(5)	(6)	(b)	(b)	(b)
ď	096 096	Standard deviation Coolant flow rate, gal/min	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
Ų	096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
H	097	Coolant flow rate, gal/min	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Ħ	097	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) 66	(b)	(́ь) 66
FOLDOUT FRAME	098	Coolant outlet tempera- ture, °F	68	69	69	68	70	66	69	66
	098	Standard deviation	0	3	1	1	3	1	3	0
مع	101	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
₹	101	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	102	Coolant outlet pressure,	14.6	14.0	16.8	16.4	15.7	14.4	13.7	13.5
	102	Standard deviation	0.3	0.2	0.1	0.1	0.4	0.3	0.1	0
	103	Outlet 17 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	100	ture, F	7. 3	<i>(</i> ,)	4. 3	(,)	(.)	(,)	() \	/. \
	103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}rm b}$ Data or results were not obtained.

Table 4. - Continued

	()			5					
Data	Parameter	å				Test			
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
104	Outlet 18 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
105	ture, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106	Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
106 107	Standard deviation Outlet 21 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
107	ture, °F Standard deviation	(b)					. ,	(b)	(b)
107	Outlet 22 coolant tempera- ture, °F	(p)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
108 109	Standard deviation Outlet 23 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	ture, °F							(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	ture, °F								
111 112	Standard deviation Outlet 26 coolant tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	ture, °F		• •						
112 113	Standard deviation Coolant flow rate, gal/min	(b) 10.4	(b) 9.0	(b) 10.6	(b) 9.5	(b) 8.9	(b) 10.3	(b) 9.5	(b) 10.7
113	Standard deviation	0.7	0.4	0.1	0.5	0.7	0.5	0.8	0.1
114	Coolant outlet tempera- ture, °F	68	69	69	68	70	66	69	66
114	Standard deviation	0	3	1	1	3	1	3	0
115	Wall coolant top tempera- ture, °F	79	79	95	100	98	85	86	80
115	Standard deviation	6	1	5	4	2	4	1	1
116	Wall coolant middle temperature, °F	95	98	101	96	118	95	114	108
116	Standard deviation	24	11	17	10	40	23	39	16
117	Wall coolant bottom temperature, °F	99	112	104	115	121	104	116	109
117	Standard deviation	7	3	6	1	4	6	5	1
120	Wa l coolant total temperature, °F	76	79	77	78	81	74	79	75
120	Standard deviation	2	3	2	1	3	1	4	0

, ·• ·		Standard deviation	6	south and the state of	5	4	2	4	1	1
	116	Wall coolant middle	95	98	101	96	118	95	114	108
	116	temperature, °F Standard deviation	24	11	17	10	40	23	39	16
	117	Wall coolant bottom	99	112	104	115	121	104	116	109
	11/	temperature, °F	33	117	104	113	17.1	104	110	103
	117	Standard deviation	7	3	6	1	4	6	5	1
	120	Wall coolant total	, 76	7 9	77	78	81	74	79	75
	,	temperature, °F	, -	. •	• •			-		
	120	Standard deviation	2	3	2	1	3	1	4	0
	121	Wall coolant flow rate,	4.6	3.9	4.5	4.1	3.8	4.1	3.8	4.4
		gal/min								
	121	Standard deviation	0.3	0.2	0.1	0.3	0.4	0.2	0.3	0.2
	140	Wall coolant outlet	15.0	25.6	17.8	25.7	24.7	23.9	26.1	16.9
	1.40	pressure, psia	1 -	<i>c</i> 0	0.8	6.2	6.4	6.5	5.8	0.7
	140 141	Standard deviation	1.5 (b)	6.0 (b)	(b)	(b)	(b)	(b)	(b)	(b)
	141	Coolant flow rate, gal/min Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	140	psia pressure;	(5)	(5)	(2)	(2)	(2)	(5)	(2)	(0)
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans-	8090	7692	9950	11778	8798	5473	4767	5111
		fer rate, Btu/hr								
	C26	Standard deviation	1395	1643	1636	- 1681	1474	1343	1872	1141
	C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C27	fer rate, Btu/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C28	Standard deviation Wall heat transfer rate,	20412	22055	19679	23045	23602	17553	20723	20216
	020	Btu/hr	20412							
	C28	Standard deviation	3672	1077	2265	1450	3315	2745	4369	1704
	C30-1	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 1, Btu/hr ft ² °F	/ L\	/ L \	/L\	/ 4 \	/ ៤ \	/ b\	(5)	(b)
	C30-1	Standard deviation	(b) 75224	(b) 72923	(b) 73981	(b) 77962	(b) 55669	(b) 78158	(b) 82555	47567
	C58	Total heat transfer rate, Btu/hr	/3224	12923	73301	77302	33003	70130	02333	47507
	C58	Standard deviation	6514	2537	6997	1868	2343	6940	3088	5298
	C30-2	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 2, Btu/hr ft ² °F								
	C30-2	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C30-3	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 3, Btu/hr ft ² °F	71.3	/1. \	41.3	/ · · ·	/ 1 \	/+ \	161	/ L \
	C30-3	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)

 $^{^{\}mbox{\scriptsize b}}$ Data or results were not obtained.

Table 4. - Continued

Data	Parameter				Test				
chan- nel		T6A	T6B	T7A	T7B	T7C	T7D1	T7D2	
051 051 052 052 077	Coolant flow rate, gal/min Standard deviation Coolant flow rate, gal/min Standard deviation Coolant inlet temperature,	(b) (b) (b) (6)	(b) (b) (b) (b) 65	(b) (b) (b) (b) 70	(b) (b) (b) (b) 66	(b) (b) (b) (b) 67	(b) (b) (b) (b) 67	(b) (b) (b) (c) 68	
077 078	Standard deviation Coolant inlet pressure, psia	3 64.6	1 77.8	2 79 . 0	1 75.4	76 . 1	2 75.3	2 77 . 9	
078 079 079 080	Standard deviation Coolant flow rate, gal/min Standard deviation Coolant outlet pressure,	3.8 (b) (b) 19.1	3.2 (b) (b) 14.3	4.8 (b) (b) 14.1	3.5 (b) (b) 14.2	5.7 (b) (b) 14.5	6.6 (b) (b) 14.3	4.3 (b) (b) 14.0	
080 081	psia Standard deviation Outlet 1 coolant tempera- ture, °F	1.1 (b)	0 (b)	0.1 (b)	0.4 (b)	0.1 (b)	0.1 (b)	1.2 (b)	
081 082	Standard deviation Outlet 2 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	
082 083	Standard deviation Outlet 3 coolant tempera- ture, °F	(p)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	
083 084	Standard deviation Outlet 4 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	
084 085	Standard deviation Outlet 5 coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	
085 086	Standard deviation Outlet 6 coolant tempera- ture, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	
086 087	Standard deviation Outlet 7 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	
087 088	Standard deviation Outlet 8 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	
088 089	Standard deviation Outlet 9 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	
089 090	Standard deviation Outlet 10 coolant tempera- ture, °F	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(h)		are possible transferred last

U88	Outlet & coolant tempera-	(a)	(D)	(D)	(n)	(D)	יייי(טי)יייי	
880	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Outlet 9 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Outlet 10 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
091	Outlet 11 coolant tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
092		(b)	(b)	(b)	(b)	(b)	(b)	(b)
092	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
093	Outlet 13 coolant tempera- ture. F	(b)	(b)	(b)	(b)	(b)	(D)	(b)
093	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
094		(b)	(b)	(b)	(b)	(b)	(b)	(b)
094	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Outlet 15 coolant tempera- ture. F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
095	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
	ture, F			-		` '		
	Standard deviation		(b)	(b)				(b) (b)
096	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	Coolant flow rate, gal/min	4.8	5.2	3.9				0.6
097 098		64	0.2 66	71	0.7 67	68	0.2 69	1.1 69
000	ture, F	2	1	2	1	2	2	2
101	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)
101	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
102	°F	15.0	10.3	17.0	14.1	TO•0	10.2	15.4
102	Standard deviation	0.8 (b)	0.7	1.6	1.2	1.5	1.6	1.7 (b)
	ture, r		•		• •	(0)	(n)	
103	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	088 089 089 090 090 091 091 092 093 093 094 095 096 096 096 096 097 097 098 098 101 102 102 103	ture, °F 088 Standard deviation 089 Outlet 9 coolant temperature, °F 089 Standard deviation 090 Outlet 10 coolant temperature, °F 090 Standard deviation 091 Outlet 11 coolant temperature, °F 091 Standard deviation 092 Outlet 12 coolant temperature, °F 093 Standard deviation 094 Outlet 13 coolant temperature, °F 095 Standard deviation 096 Outlet 14 coolant temperature, °F 097 Standard deviation 098 Outlet 15 coolant temperature, °F 099 Standard deviation 090 Outlet 16 coolant temperature, °F 091 Standard deviation 092 Outlet 16 coolant temperature, °F 093 Standard deviation 094 Outlet 16 coolant temperature, °F 095 Standard deviation 096 Coolant flow rate, gal/min 097 Coolant flow rate, gal/min 098 Standard deviation 099 Coolant outlet temperature, °F 098 Standard deviation 100 Coolant flow rate, gal/min 101 Standard deviation 102 Coolant outlet pressure, °F 103 Standard deviation 104 Coolant outlet pressure, °F 105 Standard deviation 106 Coolant outlet pressure, °F 107 Standard deviation 108 Coolant outlet pressure, °F	ture, °F 088 Standard deviation (b) 089 Outlet 9 coolant tempera— ture, °F 089 Standard deviation (b) 090 Outlet 10 coolant tempera— ture, °F 090 Standard deviation (b) 091 Outlet 11 coolant tempera— ture, °F 091 Standard deviation (b) 092 Outlet 12 coolant tempera— ture, °F 093 Standard deviation (b) 094 Outlet 13 coolant tempera— ture, °F 095 Standard deviation (b) 096 Outlet 14 coolant tempera— ture, °F 097 Standard deviation (b) 098 Standard deviation (b) 099 Outlet 15 coolant tempera— ture, °F 090 Standard deviation (b) 090 Outlet 16 coolant tempera— ture, °F 091 Standard deviation (b) 092 Outlet 16 coolant tempera— ture, °F 093 Standard deviation (b) 095 Outlet 16 coolant tempera— ture, °F 096 Standard deviation (b) 097 Coolant flow rate, gal/min (b) 098 Standard deviation (b) 099 Coolant flow rate, gal/min (b) 090 Coolant flow rate, gal/min (b) 091 Coolant flow rate, gal/min (b) 092 Coolant outlet tempera— ture, °F 093 Standard deviation (b) 094 Outlet 16 coolant tempera— ture, °F 095 Standard deviation (b) 096 Coolant flow rate, gal/min (b) 097 Coolant flow rate, gal/min (b) 098 Standard deviation (b) 099 Coolant outlet tempera— ture, °F 098 Standard deviation (b) 099 Coolant outlet pressure, °F 100 Standard deviation (b) 101 Coolant flow rate, gal/min (b) 102 Coolant outlet pressure, °F 103 Standard deviation (b)	ture, °F 088 Standard deviation (b) (b) 089 Outlet 9 coolant tempera— (b) (b) 1089 Standard deviation (b) (b) 090 Outlet 10 coolant tempera— (b) (b) 1090 Ture, °F 090 Standard deviation (b) (b) 091 Outlet 11 coolant tempera— (b) (b) 1092 Outlet 12 coolant tempera— (b) (b) 1093 Outlet 12 coolant tempera— (b) (b) 1094 Standard deviation (b) (b) 1095 Standard deviation (b) (b) 1096 Outlet 14 coolant tempera— (b) (b) 1097 Outlet 15 coolant tempera— (b) (b) 1098 Standard deviation (b) (b) 1099 Standard deviation (b) (b) 1090 Outlet 16 coolant tempera— (b) (b) 1091 Outlet 16 coolant tempera— (b) (b) 1092 Standard deviation (b) (b) 1093 Standard deviation (b) (b) 1094 Outlet 16 coolant tempera— (b) (b) 1095 Standard deviation (b) (b) 1096 Standard deviation (b) (b) 1097 Coolant flow rate, gal/min (b) (b) 1098 Coolant outlet tempera— (b) 1098 Coolant outlet tempera— (b) 1009 Coolant flow rate, gal/min (b) (b) 101 Standard deviation (b) (b) 102 Coolant outlet pressure, 15.6 16.3 103 Standard deviation (b) (b) 104 Standard deviation (b) (b) 105 Standard deviation (b) (b) 106 Standard deviation (b) (b) 107 Standard deviation (b) (b) 108 Standard deviation (b) (b) 109 Standard deviation (b) (b) 100 Standard deviation (b) (b) 101 Standard deviation (b) (b) 102 Standard deviation (b) (b) 103 Standard deviation (b) (b) 104 Standard deviation (b) (b) 105 Standard deviation (b) (b) 106 Standard deviation (b) (b) 107 Standard deviation (b) (b) 108 Standard deviation (b) (b) 109 Standard deviation (b) (b) 100 Standard deviation (b) (b) 101 Standard deviation (b) (b)	ture, °F 088 Standard deviation 089 Outlet 9 coolant tempera- ture, °F 089 Standard deviation 090 Outlet 10 coolant tempera- ture, °F 090 Standard deviation 091 Outlet 11 coolant tempera- ture, °F 091 Standard deviation 092 Outlet 12 coolant tempera- ture, °F 092 Standard deviation 093 Outlet 12 coolant tempera- ture, °F 094 Standard deviation 095 Outlet 13 coolant tempera- ture, °F 096 Standard deviation 097 Outlet 14 coolant tempera- ture, °F 098 Standard deviation 099 Outlet 15 coolant tempera- ture, °F 090 Standard deviation 090 Outlet 15 coolant tempera- ture, °F 091 Standard deviation 092 Outlet 15 coolant tempera- ture, °F 095 Standard deviation 096 Outlet 16 coolant tempera- ture, °F 097 Standard deviation 098 Coolant flow rate, gal/min 098 Coolant flow rate, gal/min 099 Coolant flow rate, gal/min 090 Standard deviation 090 Standard deviation 090 Coolant flow rate, gal/min 090 Standard deviation 090 Coolant flow rate, gal/min 090 Standard deviation 090 Standard deviation 090 Standard deviation 090 Coolant flow rate, gal/min 090 Standard deviation 090 Standard deviation 090 Coolant flow rate, gal/min 090 Standard deviation 090 Standard deviation 090 Standard deviation 090 Coolant flow rate, gal/min 090 Standard deviation 090 Standard devia	ture, °F 088	ture, °F 088 Standard deviation (b) (b) (b) (b) (b) (b) 089 Outlet 9 coolant tempera- ture, °F 089 Standard deviation (b) (b) (b) (b) (b) (b) 090 Outlet 10 coolant tempera- ture, °F 090 Standard deviation (b) (b) (b) (b) (b) (b) 091 Outlet 11 coolant tempera- ture, °F 091 Standard deviation (b) (b) (b) (b) (b) (b) 092 Outlet 12 coolant tempera- ture, °F 092 Standard deviation (b) (b) (b) (b) (b) (b) 093 Outlet 13 coolant tempera- ture, °F 093 Standard deviation (b) (b) (b) (b) (b) (b) 094 Outlet 14 coolant tempera- ture, °F 095 Standard deviation (b) (b) (b) (b) (b) (b) 096 Outlet 15 coolant tempera- ture, °F 097 Standard deviation (b) (b) (b) (b) (b) (b) 098 Outlet 16 coolant tempera- ture, °F 099 Standard deviation (b) (b) (b) (b) (b) (b) 090 Outlet 16 coolant tempera- ture, °F 091 Standard deviation (b) (b) (b) (b) (b) (b) 092 Standard deviation (b) (b) (b) (b) (b) (b) 093 Outlet 15 coolant tempera- ture, °F 094 Standard deviation (b) (b) (b) (b) (b) (b) 095 Outlet 16 coolant tempera- ture, °F 096 Standard deviation (b) (b) (b) (b) (b) (b) 097 Coolant flow rate, gal/min (b) (b) (b) (b) (b) (b) 098 Standard deviation (b) (b) (b) (b) (b) (b) 099 Standard deviation (b) (b) (b) (b) (b) (b) 090 Standard deviation (b) (b) (b) (b) (b) (b) 091 Standard deviation (b) (b) (b) (b) (b) (b) 092 Standard deviation (b) (b) (b) (b) (b) (b) 093 Outlet 15 coolant flow rate, gal/min (b) (b) (b) (b) (b) (b) (b) 094 Standard deviation (b) (b) (b) (b) (b) (b) (b) 095 Standard deviation (b) (b) (b) (b) (b) (b) (b) 096 Standard deviation (b) (b) (b) (b) (b) (b) 097 Coolant flow rate, gal/min (b) (b) (b) (b) (b) (b) 098 Standard deviation (b) (b) (b) (b) (b) (b) 099 Standard deviation (b) (b) (b) (b) (b) (b) 090 Standard deviation (b) (b) (b) (b) (b) (b) 091 Standard deviation (b)	ture, °F 088 Standard deviation (b) (b) (b) (b) (b) (b) (b) 1089 Outlet 9 coolant tempera (b) (b) (b) (b) (b) (b) (b) 1090 Outlet 10 coolant tempera (b) (b) (b) (b) (b) (b) (b) (b) 1090 Outlet 10 coolant tempera (b)

 $^{^{\}rm b}$ Data or results were not obtained.

Table 4. - Continued

(f) Concluded. Coolant system data

	(T) Conci	uded. Co	orant s	ystem da	ld			
Data chan—	Parameter				Test			
nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
104	Outlet 18 coolant tempera- ture, °F	(p)	(b)	(p)	(b)	(b)	(b)	(b)
104 105	Standard deviation Outlet 19 coolant tempera—	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(p)	(b)
105 106	ture, °F Standard deviation Outlet 20 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
106 107	Standard deviation Outlet 21 coolant tempera- ture, °F	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
107 108	Standard deviation Outlet 22 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)
108 109	Standard deviation Outlet 23 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
109 110	Standard deviation Outlet 24 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
110 111	Standard deviation Outlet 25 coolant tempera- ture, °F	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
111 112	Standard deviation Outlet 26 coolant tempera- ture, °F	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
112 113 113	Standard deviation Coolant flow rate, gal/min Standard deviation	(b) 8.7 0.5	(b) 9.8 0.4	(b) 9.6 0.6	(b) 10.8 0.8	(b) 9.1 0.9	(b) 9.0 0.8	(b) 9.6 0.6
114	Coolant outlet tempera- ture, °F	64	66	71	67	68	69	69
114 115	Standard deviation Wall coolant top tempera- ture, °F	3 85	1 92	2 113	1 93	2 98	2 107	2 106
115 116	Standard deviation Wall coolant middle temperature, °F	14 93	10 90	11 110	9 88	8 103	12 112	8 113
116 117	Standard deviation Wall coolant bottom temperature, °F	16 123	18 98	23 127	20 128	26 115	29 134	28 99
117 120	Standard deviation Wall coolant total	12 75	9 75	. 7 83	13 76	18 79	27 80	4 82
120 121	temperature, °F Standard deviation Wall coolant flow rate.	3 3. 7	3 4.7	3 3.8	2 4.1	3 3.9	5 3.7	3 4.5

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,	110	temperature, °F		30	TIO	00	TOO	746	
	116	Standard deviation	16	18	23	20	26	29	28
	117	Wall coolant bottom	123	98	127	128	$1\overline{15}$	134	99
		temperature, °F							
	117	Standard deviation	12	9	7	13	18	27	4
	120	Wall coolant total	75	75	83	76	79	80	82
		temperature, °F							
	120	Standard deviation	3	3	3	2	3	5	3
	121	Wall coolant flow rate,	3.7	4.7	3.8	4.1	3.9	3.7	4.5
		gal/min							
	121	Standard deviation	0.3	0.3	0.3	0.4	0.6	0.7	0.4
	140	Wall coolant outlet	39.5	33.3	35.9	33.6	42.2	53.7	31.2
		pressure, psia							
	140	Standard deviation	18.6	21.3	30.8	18.4	28.0	28.0	26.6
	141	Coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	141	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	145	Coolant outlet pressure,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		psia	, .			4. 3	4. 3	4. 1	
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C26	Heat exchanger heat trans-	7893	7456	10368	6972	7745	8058	6792
		fer rate, Btu/hr							
	C26	Standard deviation	1507	2090	1684	1734	2168	2004	1378
	C27	Heat extractor heat trans-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	007	fer rate, Btu/hr	(5 \	/L\	/ L \	/h\	(5)	(h)	(b)
	C27	Standard deviation	(b) 21181	(b) 22429	(b) 25839	(b) 21454	(b) 22111	(b) 24121	30936
	C28	Wall heat transfer rate,	21191	22429	20009	21434	22111	24121	30930
	C28	Btu/hr Standard deviation	3419	5674	3699	2724	4450	9669	2982
	C30-1	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C30-1	ent 1, Btu/hr ft ² °F	(5)	(5)	(5)	(5)	(5)	(5)	. (5)
	C30-1	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C58	Total heat transfer rate,	82133	73023	87891	80021	76 <u>8</u> 14	87369	82793
		Btu/hr							
	C58	Standard deviation	5389	5946	7178	5602	10 668	6138	5398
	C30-2	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 2, Btu/hr ft ² °F	• •	, ,	• •				
	C30-2	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C30-3	Heat transfer coeffici-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ent 3, Btu/hr ft ² °F							
	C30-3	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)

b Data or results were not obtained.

TABLE 4. - Continued.

(g) Combustor gas system data

	(9)	oombas oc	. gus	53 5 6 61.						
Data chan-	Parameter					Test				
nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
122	Gas cooler 4 coolant temperature, °F	89	84	80	75	78	94	82	67	69
122	Standard deviation	1	7	8	1	5	1	13	0	1
123	Gas cooler 3 coolant temperature, °F	89	83	80	73	76	93	82	67	69
123	Standard deviation	1	7	6	3	6	2	14	1	1
124	Gas cooler 2 coolant temperature, °F	85	77	. 70	67	68	87	76	63	64
124	Standard deviation	1	7	7	1	6	1	12	0	1
125	Gas cooler 1 coolant temperature, °F	83	78	75	70	73	86	72	64	65
125	Standard deviation	1	7	7	1	5	1	9	1	0
126	Gas cooler 4 gas temperature, °F	614	606	655	685	702	677	701	744	757
126	Standard deviation	16	39	11	27	9	20	66	24	6
127	Gas cooler 3 gas temperature, °F	533	520	569	595	607	594	626	678	688
127	Standard deviation	14	35	10	38	20	14	60	27	7
128	Gas cooler 2 gas temperature, °F	510	447	482	528	544	539	577	609	613
128	Standard deviation	18	32	10	24	18	15	62	13	6
129	Gas cooler 1 gas temperature, °F	587	569	620	649	660	617	518	695	694
129	Standard deviation	14	35	16	28	12	11	199	14	8
130	Gas cooler total coolant temperature, °F	70	65	60	53	55	73	64	53	53
130	Standard deviation	0	8	9	0	6	0	9	0	0
132	Gas heat exchanger 4 wall temperature, F	620	580	616	645	651	623	661	671	650
132	Standard deviation	16	28	7	20	8	27	43	46	73
133	Gas heat exchanger 3 wall temperature, F	602	552	577	583	592	594	639	660	641
133	Standard deviation	14						42	46	71
134	Gas heat exchanger 2 wall temperature, F	598	513	511	552	537	576	620	626	601
134	Standard deviation	14	35	12	29	41	26	38	43	78
135	Gas heat exchanger 1 wall temperature, F	597	549	592	623	632	581	511	653	627
135	Standard deviation	13	26	10	28	11	17	172	41	67
142	Gas coolant flow rate, gal/min	12.18	11.59	10.92	10.99	9.84	11.42	13.13	14.70	13.64
142	Standard deviation	0.11	0.72	0.66	0.38	2.52	0.17	2.40	0.06	0.65
143	Gas cooler coolant outlet temperature, °F	88	82	77		75	89	77	65	67
143	Standard deviation	11			1	5	. 1	11	0,	1

142	Standard deviation	0.11	0.72	0.66	0.38	2.52	0.17	2.40	0.06	0.65
143	Gas cooler coolant outlet temperature, °F	88	82	77	72	75	89	77	65	67
143	Standard deviation	1	7	7	1	5	1	11	0	1
144	Exhaust gas tempera- ture, F	348	301	307	303	332	304	333	332	346
144	Standard deviation	13	17	10	11	5 (L)	43	56 (b)	56 (b)	37 (b)
145	Exhaust gas exit pres- sure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(p)	(b)	(b)	(p)	(b) (b)	(b)	(p)	(b)	(b)
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
146	Standard deviation	(Ь)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
076	Exhaust gas cooler gas temperature, °F	70	55	79	101	87	217	106	196	88
076	Standard deviation	24	16	29	38	31	81	4	96	.37
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr	89508	81672	79600	90178	82551	71746	71347	58939	69683
C29	Standard deviation	6111	10952	8733	7095	21814	2920	24593	2382	7979
C37	Exhaust gas flow rate, lb/hr	582	564	565	574	564	573	506	565	569
C37	Standard deviation	4	24	7	4	12	11	188	7	11
C38	Gas heat transfer, Btu/hr	42744	32753	33839	35749			32759		38939
C38	Standard deviation	2064		1356	1642	731		12305	7883	6090
C39	<pre>Gas velocity at grid, ft/sec</pre>	4.10		3.88	4.28	4.05	4.08	3.63	3.93	3.93
C39	Standard deviation	0.07		0.06	0.41	0.11	0.08	1.35	0.05	0.08
C40	Gas velocity at 26-inch bed, ft/sec	4.09	3.71	3.94	4.28	4.02		3.61	3.97	4.00
C40	Standard deviation	0.04		0.06	0.40			1.34	0.04	0.08
C41	Gas velocity at 44-inch bed, ft/sec	1.91	1.74	1.85	2.01	1.88	1.90	1.69	1.86	1.87
C41	Standard deviation	0.02		0.03	0.19		0.04	0.62	0.02	0.04
C42	Gas velocity at 52-inch bed, ft/sec	1.49	1.36	1.45	1.58	1.48	1.49	1.32	1.46	1.47
C42	Standard deviation	0.02	0.08	0.02	0.15	0.04	0.03	0.49	0.01	0.03
C43	Gas velocity at 68-inch bed, ft/sec	(b)	(b)	(b)	(b)	(b)	1.19	1.07	1.15	1.17
C43	Standard deviation	(b)	(b)	(b)	(b)	(b)	0.02	0.40	0.02	0.02
C44	Gas velocity at 80-inch bed, ft/sec	0.98	0.89	0.96	1.04	0.97	0.88	0.81	0.88	0.90
C44	Standard deviation	0.01	0.05	0.02	0.09	0.02	0.02	0.30	0.02	0.02
C45	Gas velocity at 97-inch bed, ft/sec	0.77	0.66	0.75	0.83	0.75	0.67	0.63	0.69	0.70
C45	Standard deviation	0.01	0.05	0.02	0.08	0.02	0.01	0.23	0.01	0.01

bData or results were not obtained.

TABLE 4. - Continued.

	(g) continu	cu. cc	ilibu 3 co	, yas	3336611	ducu			
Data chan-	Parameter				Te	est			
nel		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
122	Gas cooler 4 coolant temperature, °F	81	88	74	69	72	73	76	79
122	Standard deviation	9	9	3	2	2	1	9	1
123	Gas cooler 3 coolant temperature, °F	81	88	74	69	72	74	76	80
123	Standard deviation	8	9	3	2	2	2	9	1
124	Gas cooler 2 coolant temperature, °F	76	82	68	64	67	68	72	74
124	Standard deviation	9	8	3	2	1	1	9	1
125	Gas cooler 1 coolant temperature, °F	76	72	57	58	58	60	69	66
125	Standard deviation	7	12	4	4	5	5	11	5
126	Gas cooler 4 gas temperature, °F	759	768	761	710	764	768	630	860
126	Standard deviation	9	170	27	20	15	21	30	14
127	Gas cooler 3 gas temperature, °F	689	702	694	646	696	697	558	779
127	Standard deviation	8	149	31	21	17	24	34	15
128	Gas cooler 2 gas temperature, °F	619	644	634	592	640	648	515	727
128	Standard deviation	9	141	26	22	18	25	33	15
129	Gas cooler 1 gas temperature, °F	682	339	331	399	450	500	400	672
129	Standard deviation	19	247	268	265	287	283	262	240
130	Gas cooler total coolant temperature, °F	66	73	53	53	53	53	64	54
130	Standard deviation	10	17	Ū	0	0	0	11	0
132	Gas heat exchanger 4 wall temperature, F	571	618	580	526	581	584	412	634
132	Standard deviation	16	130	41	35	31	34	55	27
133	Gas heat exchanger 3 wall temperature, F	564	602	573	520	575	578	406	627
133	Standard deviation	14	128	39	35	29	33	53	27
134	Gas heat exchanger 2 wall temperature, F	517	573	538	488	549	568	405	617
134	Standard deviation	16	121	38	36	27	29	53	25
135	Gas heat exchanger 1 wall temperature, F	514	257	271	299	339	374	323	480
135	Standard deviation	34	159	181	162	183	186	183	148
142	Gas coolant flow rate, gal/min	16.2	12.6	11.3	13.7	13.7	12.8	13.2	10.3
142	Standard deviation	3.0	2.2	0.7	0.4	0.4	0.4	1.9	0.3
143	Gas cooler coolant outlet temperature, °F	78	82	68	65	67	68	73	74
143	Standard deviation	8	9	<u>. 1</u>	0		1	9	1

143	Standard deviation	8	9					BORNEL LANGE DE	
144	Exhaust gas tempera- ture, F	319	393	333	304	328	335	225	383
144	Standard deviation	6	143	29	25	22	24	38	20
145	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
T-10	sure, psid	(5)	(0)	(5)	(5)	(5)	(6)	(5)	(5)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
140		(6)	(D)	(0)	(0)	(0)	(0)	(0)	(0)
1 1 (pph	/ L\	/ L\	/h\	/61	(5)	/ b\	(b)	(5)
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
	pph	(,)	41.3	/1.	(1.)	/. \	/1.3	71.5	71.3
151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
076	Exhaust gas cooler gas	90	163	131	80	103	88	132	84
	temperature, F			•	=-			•	_
076	Standard deviation	4		8	53	0	63	0	(1.)
152	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	sure, psia		4					4. 1	
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer,	70288	63504	63061	52270	74080	76893	36421	92074
	Btu/hr								
C29	Standard deviation	8256	8901	1173		5787		11258	7026
C37	Exhaust gas flow rate,	560	606	520	494	568	565	325	634
	lb/hr								
C37	Standard deviation	12	67	3		3	9	3	
C38	Gas heat transfer, Btu/hr	32052	44317	33266	28532	36562	36187	10160	45217
C38	Standard deviation	1121	18275	3465	2793	3100	4522	3337	2390
C39	Gas velocity at grid,	3.9	4.1	3.9	4.0	4.5	5.0	4.0	4.2
	ft/sec								
C39	Standard deviation	0.1	1.7	0	0	0.1	0.1	0.1	0
C40	Gas velocity at 26-inch	3.9	3.4	4.0	(b)	4.5	5.1	4.1	4.3
	bed, ft/sec				,,				
C40	Standard deviation	0.1	1.0	0	(b)	0	0.1	0.1	0
C41	Gas velocity at 44-inch	1.8	1.9	1.9	2.0	2.1	2.4	1.9	2.0
	bed, ft/sec								
C41	Standard deviation	0	0.7	0	0	0	0	0	O
C42	Gas velocity at 52-inch	1.4		1.5	1.5	1.7	1.9	1.5	1.6
0 12	bed, ft/sec	_ • '	1.0	1.0	1.0	±•,	1.3	0	
C42	Standard deviation	0	0.6	0	0	0	0	0	0
C43	Gas velocity at 68-inch	1.2	1.2	1.2	1.2	1.3	1.5	1.2	1.3
U43	bed, ft/sec	1.2	1.2	1.6	1.2	1.0	1.5	1.2	1.5
C43	Standard deviation	0	0.5	0	0	0	^	0	0
							1 0		1.0
C44	Gas velocity at 80-inch	0.9	0.9	0.9	1.0	1.0	1.2	0.9	1.0
C 4 4	bed, ft/sec	0	0.4	^	^	^	^	0	0
C44	Standard deviation	0	0.4	0	0	0	0	0	0
C45	Gas velocity at 97-inch	0.7	0.7	0.7	0.8	0.8	0.9	0.7	0.8
C 4 F	bed, ft/sec	^	0 0	^	^	^	^	^	^
C45	Standard deviation	0	0.3	0	0	0	0	0	0

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.



TABLE 4. - Continued.

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	Data	Parameter				Test			
	chan- nel		C1	С3	83	C11	C12	C16	C17
	122	Gas cooler 4 coolant temperature, °F	81	74	74	74	74	88	92
	122 123	Standard deviation Gas cooler 3 coolant	7 81	1 73	1 74	1 74	6 73	2 88	2 92
	123	temperature, °F Standard deviation	_6	_1	1	1	6	2	2
	124	Gas cooler 2 coolant temperature, °F	78	70	70	70	70	85	88
	124 125	Standard deviation Gas cooler 1 coolant temperature, °F	6 76	1 65	1 66	1 66	6 68	2 80	2 82
	125 126	Standard deviation Gas cooler 4 gas	9 589	0 731	1 719	1 733	6 635	2 772	1 845
	126 127	temperature, F Standard deviation Gas cooler 3 gas	217 546	16 679	1 670	13 684	16 587	19 719	32 792
	127 128	temperature, F Standard deviation Gas cooler 2 gas	201 524	16 641	1 631	13 643	19 547	18 680	31 748
	128	temperature, °F Standard deviation	191	14	1	9	16	17	29
	129	Gas cooler 1 gas temperature, °F	495	757	759	759	580	769	812
	129 130	Standard deviation Gas cooler total coolant temperature, °F	198 72	36 59	8 59	17 59	49 63	47 73	78 73
	130 132	Standard deviation Gas heat exchanger 4 wall	8 541	1 636	1 619	1 654	7 521	1 662	0 681
	132	temperature, F Standard deviation	234	19	2	8	21	11	10
	133	Gas heat exchanger 3 wall temperature, F	527	621	607	643	513	650	669
	133 134	Standard deviation Gas heat exchanger 2 wall temperature, F	228 523	19 612	2 598	8 636	21 506	11 641	10 652
	134 135	Standard deviation Gas heat exchanger 1 wall	230 447	18 605	2 622	8 650	22 417	10 595	11 573
	135	temperature, F Standard deviation	215 14.0	51 12.7	13 12.4	26 13.0	69 13.4	90 14.6	149 13.9
	142	Gas coolant flow rate, gal/min							
Weken .	142 143	Standard deviation Gas cooler coolant outlet temperature, °F	2.6 79	0.2 70	0.4 71	0.4 71	0.8 71	1.9 85	0.1

142 143	Standard deviation Gas cooler coolant outlet temperature, °F	2.6 79	0.2 70	0.4 71	0.4 71	0.8 71	1.9 85	0.1 88
143	Standard deviation	7	1	0	1	6	2	1
144	Exhaust gas tempera- ture, F	336	332	336	321	241	350	391
144	Standard deviation	30	20	6	19	30	13	8
145	Exhaust gas exit pres- sure, psid	(b)						
145	Standard deviation	(b)						
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(́Ь)	(b)
146	Standard deviation	(b)						
151	Exhaust gas flow rate, pph	(b)						
151	Standard deviation	(b)						
076	Exhaust gas cooler gas temperature, °F	168	78	74	95	72	`86	91
076	Standard deviation	128	3	3	45	4	2	1
152	Exhaust gas exit pres- sure, psia	(b)						
152	Standard deviation	(b)	(b)				(b)	(b)
C29	Coolant heat transfer, Btu/hr		58734	58442	55968	35613	58526	83690
C29	Standard deviation	16016	6641	7986	7887	9975	5410	3174
C37	Exhaust gas flow rate, Ib/hr	588	586	584	597	350	588	688
C37	Standard deviation	7	4		7	10	7	3
C38	Gas heat transfer, Btu/hr					14756		
C38	Standard deviation	4226	2907	561			1994	1212
C39	Gas velocity at grid, ft/sec	4.2	4.7		4.1	4.3	5.3	4.5
C39	Standard deviation	0.5	0	0.1	0	0.1	0.3	0.1
C40	Gas velocity at 26-inch bed, ft/sec	4.1	4.7	4.1	4.1		5.4	4.6
C40	Standard deviation	0	0	0	0	0.1	0.3	0.1
C41	Gas velocity at 44-inch bed, ft/sec	1.9	2.2	1.9	1.9	2.1	2.5	2.1
C41	Standard deviation	0.3	0	0	0	0.1	0.2	0.1
C42	Gas velocity at 52-inch bed, ft/sec	1.5	1.7	1.4	1.5	1.6	2.0	1.6
C42	Standard deviation	0.1	0	0	0	0	0.1	0
C43	Gas velocity at 68-inch bed, ft/sec	1.2	1.3	1.2	1.2	1.3	1.6	1.3
C43	Standard deviation	0.2	0	0	. 0	0	0.1	0
C44	Gas velocity at 80-inch bed, ft/sec	0.9	(b)	(b)	(b)	(b)	(b)	(b)
C44	Standard deviation	0.1	(b)	(b)	(b)	(b)	(b)	(b)
C45	Gas velocity at 97-inch bed, ft/sec	0.7	0.8	0.7	0.7	8.0	1.0	0.8
C45	Standard deviation	0.1	0	0	0	0	0.1	0

bData or results were not obtained.

22.(1)

TABLE 4. - Continued.

				Ū	•			
Data	Parameter				Test			
chan- nel		D6	D7	D2	D1	D10	D3	D4
122	Gas cooler 4 coolant temperature, °F	90	84	(b)	82	81	91	84
122	Standard deviation Gas cooler 3 coolant temperature, °F	1	3	(b)	2	80	3	2
123		88	83	47	82	80	91	83
123	Standard deviation Gas cooler 2 coolant temperature, °F	1	3	16	2	4	3	3
124		85	80	(b)	80	78	88	81
124 125	Standard deviation Gas cooler 1 coolant temperature, °F	1 85	3 80	(b)	2 79	3 78	3 86	2 80
125	Standard deviation Gas cooler 4 gas temperature, °F	1	3	(b)	2	3	3	2
126		684	706	329	651	609	761	743
126	Standard deviation Gas cooler 3 gas temperature, °F	12	8	10	2	5	8	18
127		648	660	304	598	553	700	700
127	Standard deviation Gas cooler 2 gas temperature, °F	10	6	7	3	6	10	8
128		616	618	583	562	516	666	663
128	Standard deviation Gas cooler 1 gas temperature, °F	10	4	10	3	3	10	5
129		688	699	650	649	604	766	745
129	Standard deviation Gas cooler total coolant temperature, °F	5	7	57	4	4	6	20
130		108	111	67	68	69	70	94
130	Standard deviation Gas heat exchanger 4 wall temperature, F	9	4	3	1	5	1	18
132		545	543	(b)	530	453	619	600
132	Standard deviation Gas heat exchanger 3 wall temperature, F	38	6	(b)	4	3	4	31
133		563	551	603	533	453	618	619
133	Standard deviation Gas heat exchanger 2 wall temperature, F	37	5	67	5	6	5	17
134		561	549	(b)	534	454	625	618
134	Standard deviation Gas heat exchanger 1 wall temperature, F	36	5	(b)	4	5	5	21
135		544	532	255	531	450	627	610
135	Standard deviation Gas coolant flow rate, gal/min	41	7	41	2	5	5	27
142		13.0	14.3	15.1	15.0	14.6	13.9	15.8
142 143	Standard deviation Gas cooler coolant outlet temperature, °F	0.1 86			2.7 80	2.4 79		1.2 81
143	Standard deviation	1	3	(b)	2	3		2

143	Gas cooler coolant outlet temperature, °F	86	81	(b)	80	79	88	8
143 144	Standard deviation Exhaust gas tempera-	1 300	3 278	(b) (b)	2 305	3 249	3 366	326
144 145	ture, F Standard deviation Exhaust gas exit pres-	9 (b)	6 (b)	(b) (b)	8 (b)	11 (b)	20 (b)	2; (b)
145 146	sure, psid Standard deviation Exhaust gas flow rate,	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
146 151	pph Standard deviation Exhaust gas flow rate,	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
151 076	pph Standard deviation Exhaust gas cooler gas	(b) 105	(b) 85	(b) 114	(b) 88	(b) 78	(b) 83	(b) 12
076 152	temperature, F Standard deviation Exhaust gas exit pres-	25 (b)	1 (b)	31 (b)	2 (b)	2 (b)	6 (b)	3; (b)
152 C29	sure, psia Standard deviation Coolant heat transfer,	(b) 82282	(b) 90739	(b)			(b) 87620	(b) 69329
C29 C37	Btu/hr Standard deviation Exhaust gas flow rate,	6584 598	6553 607	(b) 587		8957 452	10166 619	20384 587
C37 C38 C38 C39	lb/hr Standard deviation Gas heat transfer, Btu/hr Standard deviation Gas velocity at grid,	5 33387 1238 7.3	5 31172 880 5.0	6 (b) (b) 3.7	1324	1012	10 43910 4474 4.2	
C39 C40	ft/sec Standard deviation Gas velocity at 26-inch bed, ft/sec	0.1 7.6	0 5.1	0 3.7	0 3.4	0 2.6		0.: 3.6
C40 C41	Standard deviation Gas velocity at 44-inch bed, ft/sec	0.1 3.5	0 2.4	0 1.7	0 1.6	0.1 1.2	0.1 1.9	0.3 1.8
C41 C42	Standard deviation Gas velocity at 52-inch bed, ft/sec	0 2.8	0 1.9	0 1.4	0 1.3	0 1.0	0 1.5	0.1 1.4
C42 C43	Standard deviation Gas velocity at 68-inch bed, ft/sec	0 2.3	0 1.5	0 1.1	0 1.0	0 8.0	0 1.3	0.1
C43 C44	Standard deviation Gas velocity at 80-inch bed, ft/sec	0 (b)	0 (b)	0 8.0	0 8.0	0 0.6	0 1.0	0.9
C44 C45	Standard deviation Gas velocity at 97-inch	(b) 1.4	(b) 0.9	0 0.6	0 0.6	0 0.5	0 0.7	0.1
C45	bed, ft/sec Standard deviation	0	0	0	0	0	0	(

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

	, .								
Data	Parameter				Т	est			
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	TB1H
122	Gas cooler 4 coolant temperature, °F	84	84	86	80	77	78	87	89
122	Standard deviation	1	4	2	1	1	5	2	3
123	Gas cooler 3 coolant temperature, °F	82	83	85	79	77	78	87	89
123	Standard deviation	2	4	2	2	1	5	2	3
124	Gas cooler 2 coolant temperature, °F	81	81	83	76	74	75	83	87
124	Standard deviation	1	3	2	2	1	5	2	2
125	Gas cooler 1 coolant temperature, °F	81	79	82	73	70	73	81	86
125	Standard deviation	1	3	2	2	2	5	2	2
126	Gas cooler 4 gas temperature, °F	502	653	693	740	785	739	727	686
126	Standard deviation	298	198	90	46	24	160	7	214
127	Gas cooler 3 gas temperature, °F	460	597	629	690	705	669	678	638
127	Standard deviation	269	178	82	45	27	142	7	197
128	Gas cooler 2 gas temperature, °F	438	571	605	650	658	611	632	592
128	Standard deviation	253	170	78	40	24	129	7	181
129	Gas cooler 1 gas temperature, °F	473	624	653	712	690	687	701	660
129	Standard deviation	277	187	84	64	52	153	55	205
130	Gas cooler total coolant temperature, °F	79	75	74	64	190	188	97	81
130	Standard deviation	7	5	3	4	4	26	17	26
132	Gas heat exchanger 4 wall temperature, F	474	569	586	621	616	559	596	569
132	Standard deviation	283	169	75	28	26	120	15	178
133	Gas heat exchanger 3 wall temperature, F	458	548	567	614	610	551	604	578
133	Standard deviation	272	164	73	30	27	118	16	180
134	Gas heat exchanger 2 wall temperature, F	457	549	570	603	607	538	598	559
134	Standard deviation	271	165	74	27	28	115	15	174
135	Gas heat exchanger 1 wall temperature, F	443	546	563	586	477	487	560	546
135	Standard deviation	261	163	73	65	80	124	74	173
142	Gas coolant flow rate, gal/min	9.7	14.5	14.4	12.3	13.3	13.7	13.3	10.3
142	Standard deviation	5.0	0.8	0.8	0.9	0.6	1.3	1.4	2.8
143	Gas cooler coolant outlet temperature, °F `	81	84	86	80	77	79	87	90
143	Standard deviation	5	4	<u></u>			<u> </u>	2	5

	gal/min			on Friend A					
142	Standard deviation	5.0		0.8		0.6	1.3	1.4	2.8
143	Gas cooler coolant outlet temperature, F	81	84	86	80	77	79	87	90
143	Standard deviation	5	4	2	1	1	5	2	5
144	Exhaust gas tempera- ture, F	346	348	350	354	337	323	351	318
144	Standard deviation	33	28	25	35	13	10	9	42
145	Exhaust gas exit pres- sure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151 076	Standard deviation Exhaust gas cooler gas	(b) 265	(b) 213	(b) 915	(b) 92	(b) 402	(b) 379	(b) 92	(b) 121
	temperature, F							_	
076	Standard deviation	170	154	2202	22	53 (L)	51	7 (E)	77 (b)
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr	48876	68036	67651	90722		88008		
C29	Standard deviation	2069		10247		8591	9297		12371
C37	Exhaust gas flow rate, lb/hr	571	584	572	635	655	643	625	629
C37	Standard deviation	8	12	9	31	11	14	42016	116
C38 C38	Gas heat transfer, Btu/hr Standard deviation	38595 4746	39936 4214	4713	7642	2462	39748 3112	2049	35245 7722
C39	Gas velocity at grid,	4.0	4.1	4.0	4.0	5.8	6.3	4.0	4.2
	ft/sec		0.0	0.0	^ ^	0.4	0.4	0 1	1.0
C39 C40	Standard deviation	0.3 (b)	0.3 (b)	0.2 (b)	0.2 4.0	0.4 5.8	0.4 6.4	0.1 3.9	1.2 4.0
640	Gas velocity at 26-inch bed, ft/sec		(0)		4.0	5.0	0.4	3.3	
C40	Standard deviation	(b)	(b)	(b)	0.2	0.4	0.4	0.1	1.0
C41	Gas velocity at 44-inch bed, ft/sec	1.9	1.9	1.9	1.9	2.7	3.0	1.8	1.9
C41	Standard deviation	0.1	0.1	0.1	0.1	0.2	0.2	1 4	0.5
C42	Gas velocity at 52-inch bed, ft/sec	1.5	1.5	1.5	1.5	2.1	2.4	1.4	1.5
C42	Standard deviation	0.1	0.1	0.1	0.1	0.2	0.2	0	0.3
C43	Gas velocity at 68-inch bed, ft/sec	1.2	1.2	1.2	0.7	1.8	1.9	1.2	1.2
C43	Standard deviation	0.1	0.1	0.1	0.3	0.1	0.1	0	0.3
C44	Gas velocity at 80-inch bed, ft/sec	0.9	(b)	0.9	(b)	1.4	1.5	0.9	(b)
C44	Standard deviation	0.1	(b)	0	(b)	0.1	0.1	0	(b)
C45	Gas velocity at 97-inch bed, ft/sec	0.7	0.7	0.7	0.7	1.1	1.2	0.7	0.7
C45	Standard deviation	0.1	0.1	0	0.1	0.1	0.1	0	0.2

 ${}^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

				•	_			
Data					Test			
char nel	ı -	TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2G
122	Gas cooler 4 coolant temperature, °F	90	99	99	89	93	88	90
122	Standard deviation	1	3	3	3	4	2	1
123	Gas cooler 3 coolant temperature, °F	89	100	100	90	94	89	92
123	Standard deviation	1	3	3	3	3	2	1 92
124	Gas cooler 2 coolant temperature, °F	87	98	98	92	98	89	92
124	Standard deviation	1	3	3	4	4	2	1
125	Gas cooler 1 coolant temperature, °F	87	98	96	90	94	88	91
125	Standard deviation	752	700	760	3	4	2	702
126	Gas cooler 4 gas temperature, °F	753	792	769	794	773	784	793
126	Standard deviation	7	7	12	11	17	18	10
127	Gas cooler 3 gas temperature, °F	711	723	699	723	704	717	724
127	Standard deviation	4	9	9	11	18	16	10
128	Gas cooler 2 gas temperature, °F	652	680	656	685	671	703	711
128	Standard deviation	5	7	10	11	17	15	8
129	Gas cooler 1 gas temperature, °F	724	757	738	786	765	794	804
129	Standard deviation	11	6	22	14	18	14	8
130	Gas cooler total coolant temperature, °F	115	127	132	100	126	113	119
130	Standard deviation	7	7	6	610	3	7 654	7 624
132	Gas heat exchanger 4 wall temperature, F	537	612	583	618	605	654	634
132	Standard deviation	13	9	20	11	15	15	10
133	Gas heat exchanger 3 wall temperature, °F	568	614	585	613	600	647	628
133	Standard deviation	9	9	20	12	16	14	10
134	Gas heat exchanger 2 wall temperature, °F	556	618	584	623	610	656	640
134	Standard deviation	12	10	20	11	16	13	9
135	Gas heat exchanger 1 wall temperature, °F	537	609	576	630	616	671	650
135	Standard deviation	13	8	31	13	15	14	12.0
142	Gas coolant flow rate, gal/min	13.9	11.6	11.2	12.6	12.2	12.3	13.8
142	Standard deviation	0.1	0.9	0.4	0.3	0.5	0.2	0.2
143	Gas cooler coolant outlet temperature, °F	90	95	96	86	90	89	92

		gal/min		· · · · · · · · · · · · · · · · · · ·	: e il constitution cardio	- April - Open -		e i chizilakki casim	School Carried Tolk
	142	Standard deviation	0.1	0.9	0.4	0.3	0.5	0.2	0.2
	143	Gas cooler coolant outlet temperature, °F	90	95	96	86		89	92
	143	Standard deviation	1	3	2	3	3	2	1
	144	Exhaust gas tempera- ture, F	299	341	317	322	322	359	346
	144	Standard deviation	7	9	10	10	20	4	27
	145	Exhaust gas exit pres- sure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	076	Exhaust gas cooler gas temperature, °F	`97	`97	101	`94	107	108	135
	076	Standard deviation	5	2	6	4		7	44
	152	Exhaust gas exit pres- sure, psia	(b)	(P)	(b)	(b)	(b)	(b)	(b)
	152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C29	Coolant heat transfer, Btu/hr		100500	94863	71956	69918	81239	82314
	C29	Standard deviation	9159	5161	4221	19368	9199	8904	5518
. .	C37	Exhaust gas flow rate, lb/hr	575	592	590	610	575	599	591
<u>Z</u>	C37	Standard deviation	17			69	7	11	2
5	C38 C38	Gas heat transfer, Btu/hr	30367			36682			
FOLDOUT	C39	Standard deviation Gas velocity at grid,	1687 3.9	1896 3.9	1155 3.8	4198 4.1	2702 3.8	1557 4.0	4556 4.0
		ft/sec							
ਹੈ	C39	Standard deviation	0.1		0.1			0	0
NO AND	C40	Gas velocity at 26-inch bed, ft/sec	3.9	4.1	4.1	4.2	4.1	4.1	4.1
₹.	C40	Standard deviation	0.1	0.1	0.1	0.4	0	0	0
)	C41	Gas velocity at 44-inch bed, ft/sec	1.8	1.9	1.9	2.0	1.9	1.9	1.9
	C41	Standard deviation	0.1	0	0	0.2	0	0	0
	C42	Gas velocity at 52-inch bed, ft/sec	1.4	1.5	1.5	1.5	1.5	1.3	1.5
	C42	Standard deviation	0.1	0	0	0.1	0	0.4	0
	C43	Gas velocity at 68-inch bed, ft/sec	1.2	1.3	1.3	1.3	1.2	1.2	1.2
	C43	Standard deviation	0	0	0	0.1	0	0	0
	C44	Gas velocity at 80-inch bed, ft/sec	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	C44	Standard deviation	0	0	0	0.1	0	0	0
	C45	Gas velocity at 97-inch bed, ft/sec	0.7	0.7	0.7		0.7	•	0.7
	C45	Standard deviation	0	0	0	0.1	0	0	0

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

(a) Continued. Combustor gas system data

	(g) (Continued.	Com	bustor	gas	system	data			
Data	Parameter					Te	st			
chan- nel			E1	E2	E3	E4	E5	E6	E9	E8
122	Gas cooler 4 coolant temperature, °F	(b)	(b)						
122 123	Standard deviation Gas cooler 3 coolant		b) b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b)
123 124	temperature, °F Standard deviation Gas cooler 2 coolant		ь) ь)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
124	temperature, °F Standard deviation		ь) ь)	(b)						
125	Gas cooler 1 coolant temperature, °F		b)	(b)	(b)	(b)	(p)	(p)	(b)	(b)
125 126	Standard deviation Gas cooler 4 gas		ь) 80	(b) 473	(b) 426	(b) 419	(b) 338	(b) 274	(b) 289	(b) 525
126 127	temperature, °F Standard deviation Gas cooler 3 gas	4	16 64	5 475	47 410	38 422	113 407	114 349	169 477	17 510
127 128	temperature, F Standard deviation Gas cooler 2 gas		15 84	5 487	39 434	37 435	6 423	9 371	13 511	16 540
128 129	temperature, °F Standard deviation Gas cooler 1 gas		17 84	5 485	48 430	40 423	7 421	9 375	14 480	18 293
129	temperature, °F Standard deviation	J	55	4	48	45	6	7	17	98
130	Gas cooler total cool temperature, °F	lant	67	76	75	74	67	65	63	73
130 132	Standard deviation Gas heat exchanger 4 temperature, F	wall 4	1 05	2 405	1 348	2 340	2 265	3 206	1 186	3 445
132 133	Standard deviation Gas heat exchanger 3		25 02	7 406	35 349	35 342	96 328	93 286	118 351	14 437
133 134	temperature, °F Standard deviation Gas heat exchanger 2	wall 4	24 18	6 421	36 364	35 357	9 345	10 300	20 369	13 465
134 135	temperature, °F Standard deviation Gas heat exchanger 1		23 217	6 399	39 328	37 309	10 322	12 278	22 278	14 154
135	temperature, F Standard deviation	warr 2	77	4	31	51	9	7	43	58
142	Gas coolant flow rate gal/min	e, 4	.6	4.3	4.5	4.7	4.7	4.7	4.3	3.5
142 143	Standard deviation Gas cooler coolant ou		0.1 68	0.4 70	0 70	0.1 71	0 71	0 70	0.5 71	0 69
143	temperature, °F Standard deviation		0	0	0	0	O	0	0	

142 143	Standard deviation Gas cooler coolant outlet	0.1 68	0.4 70	0 70	0.1 71	0 71	0 70	0.5 71	0 69
143	temperature, °F Standard deviation	0	0	0	0	0	0	0	0
144	Exhaust gas tempera- ture, F	174	260	172	188	187	152	178	186
144 145	Standard deviation Exhaust gas exit pres-	9 79.3	13 76.5	8 80.5	9 37.7	14 57.3	5 79 . 6	11 78.3	25 71.6
145	sure, psid Standard deviation	1.0	0.2	0.2	5.5	0.3	0.3	0.4	1.2
146	Exhaust gas flow rate,	4.7	4.4	4.7		9.1	4.6	4.4	10.3
146	Standard deviation	0.3	0.1	0.6	0.5	24.2	0.2	0.2	24.0
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151 076	Standard deviation Exhaust gas cooler gas temperature, °F	(b) 75	(b) 87	(b) 86	(b) 81	(b) 75	(b) 73	(b) 69	(b) 81
076 152	Standard deviation Exhaust gas exit pres- sure, psia	(b)	(b)	2 (b)	(b)	1 (b)	2 (b)	(b)	5 (b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr		11003		10292	9407	7646	8029	8294
C29 C37	Standard deviation Exhaust gas flow rate, lb/hr	154 1011	465 835	175 1026	326 241	275 555	538 1040	303 958	337 832
C37	Standard deviation	33	21	59	94	32	19	26	48
C38	Gas heat transfer, Btu/hr		31203		6576	8084	8300		10186
C38	Standard deviation	2294	3432	2043	1465	1531	3252	(b)	5177
C39	Gas velocity at grid, ft/sec	3.8	5.6	2.8	6.6	4.5	2.5	3.1	3.8
C39 C40	Standard deviation Gas velocity at 26-inch	0.5 6.9	0.1 5.6	0.1 6.9	0.5 6.6	0.1 4.9	0 6.3	0 6.3	0.1 5.3
C40	bed, ft/sec Standard deviation	0.2	0	0.4	0.4	0.2	0.2	0.2	0.5
C41	Gas velocity at 44-inch bed, ft/sec	3.1	2.6	3.1	3.1	2.3	2.9	2.9	2.4
C41	Standard deviation	0.1	0	0.2	0.2	0.1	0.1	0.1	0.2
C42	Gas velocity at 52-inch bed, ft/sec	2.5	2.1	2.5	2.4	1.8	2.3	2.3	1.9
C42	Standard deviation	0.1	0	0.1	0.2	0.1	0.1	0.1	0.2
C43	Gas velocity at 68-inch bed, ft/sec	2.1	1.7	2.0	2.0	1.5	1.9	1.9	1.6
C43	Standard deviation	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1
C44	Gas velocity at 80-inch bed, ft/sec	1.6	1.3	1.6	1.6	1.1	1.4	1.4	1.2
C44	Standard deviation	0	0	0.1	0.1	0	0	0	0.1
C45	Gas velocity at 97-inch bed, ft/sec	1.2	1.1	1.3	1.3	0.9	1.1	1.1	1.0
C45	Standard deviation	0	0	0.1	0.1	0	0	0	0.1

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.



TABLE 4. - Continued.

	, ,			J	·			
Data	Parameter				Test			
chan- nel	•	E19	E13A	E13B	E14	E11	E12	E15
122	Gas cooler 4 coolant temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
122 123	Standard deviation Gas cooler 3 coolant	(b) (b)	(d) (d)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
123	temperature, °F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
124	Gas cooler 2 coolant temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
124 125	Standard deviation Gas cooler 1 coolant temperature, °F	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)
125 126	Standard deviation Gas cooler 4 gas	(b) 320	(b) 386	(b) 207	(b) 343	(b) , 425	(b) 215	(b) 398
126	temperature, °F Standard deviation	150	96	125	121	8	110	7
127 127	Gas cooler 3 gas temperature, F	489 37	441	458	446	435	233	405
128	Standard deviation Gas cooler 2 gas temperature, °F	524	12 461	4 477	4 461	8 448	106 406	7 419
128 129	Standard deviation Gas cooler 1 gas	37 498	7 458	2 474	6 459	8 449	17 404	6 418
129 130	temperature, °F Standard deviation Gas cooler total coolant	38 71	7 70	2 78	9 80	7 72	15 70	6 71
130	temperature, F Standard deviation	3	3	1	2	1	1	1
132	Gas heat exchanger 4 wall temperature, F	230	307	149	257	310	145	292
132 133	Standard deviation Gas heat exchanger 3 wall temperature, F	121 390	81 362	106 377	100 356	8 341	78 156	7 319
133 134	Standard deviation Gas heat exchanger 2 wall	47 450	12 391	5 402	2 378	8 363	90 319	7 341
134 135	temperature, F Standard deviation Gas heat exchanger 1 wall	50 293	6 313	3 313	3 303	9 296	17 260	8 277
135	temperature, [*] F Standard deviation	50	9	7	5	5	12	5
142	Gas coolant flow rate, gal/min	4.1	4.6	4.6	4.6	4.6	4.6	4.6
142 143	Standard deviation Gas cooler coolant outlet	0.4 74	0 78	0 78	0 78	0 77	0 77	0 76
143	temperature, °F Standard deviation	4	1	1	1	0	1	1

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	142 143	Standard deviation Gas cooler coolant outlet	0.4 74	0 78	0 78	0 78	0 77	0 77	0 76
	143	temperature, °F Standard deviation	4	1	1	1	0	1	100
	144	Exhaust gas tempera- ture, F	176	225	221	206	214	168	166
	144 145	Standard deviation Exhaust gas exit pres- sure, psid	22 79 . 1	77 . 7	9 75 . 5	2 74 . 8		10 62.7	20 61.4
	145	Standard deviation	1.0	0.6		1.6			
	146	Exhaust gas flow rate, pph	0.7	1.0	1.0	1.0	0.9	1.0	0.9
	146	Standard deviation	0.4	0	0	0.1	0	0	0
	151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)		(b)
	151 076	Standard deviation Exhaust gas cooler gas temperature, F	(b) 120	(b) 80	(b) 83	(b) 84	(b) 78	(b) 75	(b) 78
	076	Standard deviation	55	1	1	1	1	0	0
	152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C29	Coolant heat transfer, Btu/hr	19169	29603	29578	27163	27072	25074	25023
	C29 C37	Standard deviation Exhaust gas flow rate,	8411 432	1299 455	2001 440	2164 450	820 419	2246 394	1761 387
덩	C37	lb/hr Standard deviation	86	7	20	27	19	30	78
Ş	C38	Gas heat transfer, Btu/hr			13027		10509		4735
j	C38	Standard deviation	2258	592		903			241
	C39	<pre>Gas velocity at grid, ft/sec</pre>	3.7	4.7	4.8	3.5	3.7	3.0	4.3
	C39	Standard deviation	0	0.1	0	0	0.3	0.2	0.8
	C40	Gas velocity at 26-inch bed, ft/sec	3.7	4.7		3.5	3.7	3.1	4.4
	C40	Standard deviation	0	0.1	0	0.2			0.5
	C41	Gas velocity at 44-inch bed, ft/sec	1.7	2.2	2.2	1.6	1.7	1.4	2.0
	C41	Standard deviation	0	0.1	0	0	0.1	0.1	0.2
	C42	Gas velocity at 52-inch bed, ft/sec	1.3	1.7		1.2	1.3	1.1	1.6
	C42	Standard deviation	0	0	0	0	0.1	0.1	0.2
	C43	Gas velocity at 68-inch bed, ft/sec	1.1	1.4	1.5	1.0	1.1	1.0	1.3
	C43	Standard deviation	0	0	0	0	0.1	0.1	0.2
	C44	Gas velocity at 80-inch bed, ft/sec	0.8	1.1	1.1	1.0	0.9	0.7	1.0
	C44	Standard deviation	0	0	0	0		0	0.1
	C45	Gas velocity at 97-inch bed, ft/sec	0.6	0.9	0.9	0.6	0.7		0.8
	C45	Standard deviation	0	0	0	0	0	0	0.1

bData or results were not obtained.

(g) Continued. Combustor gas system data

		(9) 001	io iliaca.	Combas	, gus	, 5,,500					
	Data chan-	Parameter					Test				
	nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
	122	Gas cooler 4 coolant temperature, °F	88	93	77	79	97	123	79	83	84
	122	Standard deviation	1	1	5	18	11	2	0	0	1
	123	Gas cooler 3 coolant temperature, °F	94	101	95	88	105	128	90	89	89
	123	Standard deviation	1 92	2 102	6 92	17 88	11 106	2 127	1 89	1 87	1 88
	124	Gas cooler 2 coolant temperature, °F	92	102	92	00	100	127	09	67	00
	124	Standard deviation	1	2	6	17	12	2	1	1	1
	125	Gas cooler 1 coolant	84	92	84	78	98	124	86	82	82
	4.5	temperature, F		_		0.0	0	•	1	0	2
	125	Standard deviation	3	5 750	206	20 747	8 763	2 678	1 671	2 653	3 671
	126	Gas cooler 4 gas temperature, °F	694	750	306	747	763	076	0/1	055	0/1
	126	Standard deviation	9	10	235	17	14	7	5	8	7
	127	Gas cooler 3 gas	632	692	603	688	707	621	582	621	629
		temperature, °F							_	_	
	127	Standard deviation	7	16	18	17	17	6	7	7	9
	128	Gas cooler 2 gas temperature, °F	594	654	557	646	663	572	553	587	579
	128	Standard deviation	7	14	24	20	18	8	6	9	8
	129	Gas cooler 1 gas temperature, °F	647	705	577	690	715	681	626	638	628
•	129	Standard deviation	28	35	36	54	53	6	4	24	27
	130	Gas cooler total coolant temperature, °F	72	78	84	71	89	114	89	75	75
	130	Standard deviation	1	2 672	4 206	18 670	8 633	3 619	1 465	1 482	1 616
	132	Gas heat exchanger 4 wall temperature, F	643	673	296						
	132	Standard deviation	11 623	21 655	202 599	19 654	34 622	6 600	1 501	12 473	12 611
	133	Gas heat exchanger 3 wall temperature, F	023	655	599	034	022	600	301	4/3	OII
	133	Standard deviation	11	21	27	19	33	5	1	10	11
	134	Gas heat exchanger 2 wall temperature, F	640	669	608	662	629	609	525	501	628
	134	Standard deviation	11	23	30	18	35	7	2	12	11
	135	Gas heat exchanger 1 wall temperature, F	476	502	350	481	452	518	388	362	467
	135	Standard deviation	17	39	90	81	53	12	4	34	31
	142	Gas coolant flow rate, gal/min	15.4	15.3	15.1	15.2	15.2	15.8	15.3	15.5	15.7
	142	Standard deviation	0	0	0.5	0.3	0	1.4	0	0	0
	143	Gas cooler coolant outlet temperature, °F	84	89	84	76	94	121	81	81	82
	143	Standard deviation	0	0	2	18	emiliania 10		HATE WITH IN THE	inerpetatus alimi () refer	erinarionale de la

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জন্মার -	142	Standard deviation	0	0	0.5	0.3	Ō	1.4	0	0	0
	143	Gas cooler coolant outlet	84	89	84	76		121	81	81	82
	1.40	temperature, F	0	0	2	10	10	21	0	0	0
	143	Standard deviation	0 284	0 367	2 221	18 342	10 321	286	257	228	270
	144	Exhaust gas tempera- ture, F	204	307	221	342	321	200	237	220	270
	144	Standard deviation	17	9	9	17	7	5	4	17	4
	145	Exhaust gas exit pres- sure, psid	72.3	78.4	72.1	80.0	79.8	76.2	79.7	59.5	39.1
	145	Standard deviation	1.0	0.2	6.5	0.6	0.2	2.1	0.1	0.2	0.1
	146	Exhaust gas flow rate,	1.6	2.8	1.6	1.7	1.8	1.8	(Ъ)	(b)	(b)
		pph									4. 3
	146	Standard deviation	0.2	0.4	0	0.1	0	0	(b)	(b)	(b)
	151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	pph Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	076	Exhaust gas cooler gas temperature, °F	75	88	89	89	88	83	95	\80 80	78
	076	Standard deviation	2	3	1	1	1	1	4	3	1
	152	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		sure, psia	4. 3	4. 3	4. 3	4. 5	(1.)	(,)		(,)	/. \
	152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C29	Coolant heat transfer, Btu/hr	133440	100090	117710	161950	208800	423800	110460	110470	109290
	C29	Standard deviation	3404	1522	13948	66495	77035	46320	1840	1499	462
	C37	Exhaust gas flow rate, lb/hr	478	605	518	511	531	528	242	188	117
	C37	Standard deviation	26	33	40	15	4	13	2	4	1
	C38	Gas heat transfer, Btu/hr	26162	54306	15529	42545	35080	25101	25345	16125	19939
-	C38	Standard deviation	2413	2120	2115	3170	1032	1464	481	1895	579
FOLDOUT	C39	<pre>Gas velocity at grid, ft/sec</pre>	4.4	5.5	3.0	4.8	4.4	3.5	3.4	4.0	6.2
Ž	C39	Standard deviation	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0	0.1
	C40	Gas velocity at 26-inch bed, ft/sec	4.3	5.4	3.9	4.8	4.5	3.9	3.6	4.3	6.3
FRAM	C40	Standard deviation	0.1	0	0.1	0.1	0	0	0	0	0.1
_	C41	Gas velocity at 44-inch	2.0	2.5	1.7	2.2	2.1	1.8	1.7	2.0	3.0
₹J	C41	bed, ft/sec Standard deviation	0	0	0	0	0	0	0	0	0
•	C41	Gas velocity at 52-inch	1.6	2.0	1.4	1.8	1.7	1.4	1.3	1.6	2.4
	0.12	bed, ft/sec	1.0	2.0		2.0			2.0	2.0	,
	C42	Standard deviation	0	0	0	0	0	0	0	0	0
	C43	Gas velocity at 68-inch bed, ft/sec	1.3	1.6	1.1	1.5	1.4	1.2	1.1	1.3	2.0
	C43	Standard deviation	0	0	0	0	0	0	0	0	0
	C44	Gas velocity at 80-inch bed, ft/sec	1.0	1.3	0.9	1.2	1.1	0.9	0.9	1.0	1.6
	C44	Standard deviation	0	0	0	0	0	0	0	0	0
	C45	Gas velocity at 97-inch bed, ft/sec	0.8	1.0	0.7	0.9	0.9	0.7	0.6	0.8	1.2
	C45	Standard deviation	0	0	0	0	0	0	0	0	0
	043		-	•		•	-	_	•	ŭ	•

TABLE 4. - Continued.

Data	Parameter	Test										
chan-	r ar ameter					E3 0						
nel		F19	F16	F27	G2	G3	G6	G1	G5			
122	Gas cooler 4 coolant temperature, °F	90	91	91	78	81	79	74	84			
122 123	Standard deviation Gas cooler 3 coolant	1 97	3 100	2 101	2 81	0 85	3 82	0 75	1 88			
123 124	temperature, °F Standard deviation Gas cooler 2 coolant	1 99	4 103	3 104	2 81	0 87	3 84	0 76	2 90			
124 125	temperature, F Standard deviation Gas cooler 1 coolant	2 90	6 91	3 92	3 77	0 82	3 81	0 75	2 86			
125 126	temperature, °F Standard deviation Gas cooler 4 gas	3 755	2 777	5 803	1 438	0 535	3 502	1 348	2 587			
126	temperature, °F Standard deviation	15	18	9	32	5	8	8	18			
127 127	Gas cooler 3 gas temperature, °F Standard deviation	712 16	734 20	756 11	427 24	511 10	486 10	355 7	607 10			
128	Gas cooler 2 gas temperature, °F	671	690	708	458	529	497	356	633			
128 129	Standard deviation Gas cooler 1 gas	18 717	20 726	11 735	25 511	5 635	9 587	7 405	10 643			
129 130	temperature, °F Standard deviation Gas cooler total coolant	26 79	32 81	39 82	52 80	10 79	7 74	19 70	29 73			
130	temperature, °F Standard deviation	1	1	1	2	, 2	3	1	2			
132	Gas heat exchanger 4 wall temperature, F	651	658	685	447	491 '	442	289	558			
132 133	Standard deviation Gas heat exchanger 3 wall temperature, F	22 649	24 653	17 679	35 455	5 493	8 448	5 314	25 596			
133 134	Standard deviation Gas heat exchanger 2 wall	21 668	23 672	16 700	28 528	7 557	9 507	6 364	16 672			
134 135	temperature, °F Standard deviation Gas heat exchanger 1 wall	22 501	23 488	16 499	30 429	4 481	8 431	6 304	18 520			
135	temperature, °F Standard deviation	42	43	49	37	13	6	20	31			
142	Gas coolant flow rate, gal/min	15.6	14.4	13.1	14.0	14.7	12.5	14.6	14.0			
142 143	Standard deviation Gas cooler coolant outlet	0 87	1.4 88	1.0 88	1.4 84	0 89	3.2 88	0.3 77	1.1 93			
143	temperature, °F Standard deviation	0	2	1	2	0	4	0	2			

.,		gal/min	14,62,623,330	ar ngarkagara ; javz. za	and the section of th	२२ व्हर्नस्थानसम् (: क्या व्यवपृत्तकः स र ्क	and the same services of small street	Character Made a series	ज. करकामान्डकानकान्द्रपुर हो जिल्हा	Joseph medicina di manggaran di Salah d
	142	Standard deviation	0	1.4	1.0	1.4	0	3.2	0.3	1.1
	143	Gas cooler coolant outlet temperature, °F	87	88	88	84	89	88	77	93
	143	Standard deviation	0	2	1	2	0	4	0	2
	144	Exhaust gas tempera- ture, F	357	356	360	232	293	238	158	350
	144	Standard deviation	15	6	10	32	18	18	14	11
	145	Exhaust gas exit pres- sure, psid	79.7	79.7	58.8	72.6	75.0	76.6	78.6	75.1
	145	Standard deviation	0.2	0.2	0.3	13.3	0.3	0.3	0.3	0.4
	146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(Þ)
	076	Exhaust gas cooler gas temperature, °F	80	82	83	124	89	83	96	88
	076	Standard deviation	1	0	0	45	0	(1)	20	4 (5)
	152	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	152	sure, psia Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C29	Coolant heat transfer, Btu/hr				129150				176440
	C29	Standard deviation	1234	1475	2478	7008	2035	17495	1745	3918
	C37	Exhaust gas flow rate, lb/hr	212	212	156	230	218	240	278	202
	C37	Standard deviation	3	1	1	45	5	6	7	3
	C38	Gas heat transfer, Btu/hr	43660	43185 1384	40806 1471	23590 4607	38580 3678	19453 3140	4102 1534	54366 2651
	C38 C39	Standard deviation Gas velocity at grid,	2316 4.7	4.7	5.8	4.2	5.0	4.0	2.8	5.9
¥	003	ft/sec	7.7	7.7	J.0	1	3.0	1.0	2.0	0.5
2	C39	Standard deviation	0.1	0.1	0.1	1.2	0.1	0.1	0	0.1
FOLDOUT	C40	Gas velocity at 26-inch bed, ft/sec	4.8	4.7	6.1	4.4	5.2	4.1	2.9	6.2
-	C40	Standard deviation	0.1	0.1	0.5	1.1	0.1	0.1	0	0.1
FRAME	C41	Gas velocity at 44-inch bed, ft/sec	2.2	2.2	2.9	2.0			1.3	2.9
	C41 C42	Standard deviation Gas velocity at 52-inch	0 1.8	0 1.8	0 2.3	0.5 1.6	0 1.9	0 1.5	0 1.0	0 2.3
•	U42	bed, ft/sec	1.0	1.0	2.5	1.0	1.9	1.5	1.0	2.5
_	C42	Standard deviation	0	0	0	0.4	0	0	0	0
	C43	Gas velocity at 68-inch bed, ft/sec	1.5	1.5	1.9	1.3	1.6	1.2	0.8	1.2
	C43	Standard deviation	0	0	0	0.3	0	0	0	0.1
	C44	Gas velocity at 80-inch bed, ft/sec	1.2	1.2	1.5	1.0	1.2	0.9	0.6	1.4
	C44	Standard deviation	0	0	0	0.3	0	0	0	0
	C45	Gas velocity at 97-inch	0.9	0.9	1.2	0.8	1.0	0.7	0.5	1.1
	C45	bed, ft/sec Standard deviation	0	0	0	0.2	0	0	0	0
		•								

TABLE 4. - Continued.

Data chan-	Parameter					Test				
nel		G10	G9	G13	G12	G15A	G15B	G14	G11	G7
122	Gas cooler 4 coolant temperature, °F	82	78	76	78	76	77	75	81	74
122	Standard deviation	1	0	0	0	1	0	0	1	0
123	Gas cooler 3 coolant temperature, °F	86	80	79	79	78	79	76	84	75
123	Standard deviation	2	0	0	1	1	0	0	1	0
124	Gas cooler 2 coolant temperature, °F	88	80	78	80	78	78	76	84	75
124	Standard deviation	2	0	0	0	1	0	0	1	0
125	Gas cooler 1 coolant temperature, °F	83	77	74	76	75	76	75	80	73
125	Standard deviation	3	1	0	0	2	0	0	2	1
126	Gas cooler 4 gas temperature, °F	581	473	462	460	464	424	312	567	326
126	Standard deviation	4	21	10	10	43	7	6	15	12
127	Gas cooler 3 gas temperature, °F	581	462	450	436	459	430	318	570	331
127	Standard deviation	9	25	11	7	37	8	5	14	9
128	Gas cooler 2 gas temperature, °F	601	477	481	479	492	463	348	616	351
128	Standard deviation	8	13	8	11	27	7	6	16	7
129	Gas cooler 1 gas temperature, °F	623	504	555	498	412	426	322	523	328
129	Standard deviation	28	32	11	24	131	5	13	40	35
130	Gas cooler total coolant temperature, °F	83	89	74	68	73	77	75	76	82
130	Standard deviation	2	2	1	1	1	1	1	1	2
132	Gas heat exchanger 4 wall temperature, F	566	436	423	424	475	458	331	603	337
132	Standard deviation	12	15	6	11	26	9	6	19	6
133	Gas heat exchanger 3 wall temperature, F	590	448	429	428	484	467	342	616	350
133	Standard deviation	11	15	9	10	28	10	7	17	10
134	Gas heat exchanger 2 wall temperature, F	661	514	506	498	527	504	371	653	381
134	Standard deviation	7	9	8	10	25	10	7	17	5
135	Gas heat exchanger 1 wall temperature, F	524	408	439	383	405	428	323	500	325
135	Standard deviation	30	30	7	19	82	6	16	58	25
142	Gas coolant flow rate, gal/min	13.8	14.7	14.6	14.7	13.9	14.8	14.7	14.0	14.7
142	Standard deviation	1.6	0.1	0.3	0	1.3	0	0	0.6	0
143	Gas cooler coolant outlet temperature, °F	90	83	80	82	81	81	78	88	77
143	Standard deviation	3	0	1	0		0	0		

142 143	Standard deviation Gas cooler coolant outlet temperature, F	1.6 90	0.1 83	0.3 80	0 82	1.3 81	0 81	0 78	0.6 88	0 77
143 144	Standard deviation Exhaust gas tempera-	3 354	0 254	1 259	0 236	1 259	0 254	0 176	1 372	0 182
144 145	ture, [®] F Standard deviation Exhaust gas exit pres- sure, psid	11 75.5	11 78.3	17 77.8	4 77 . 8	20 77.9	16 77.7	11 78.8	7 74.4	8 79 . 0
145 146	Ständard deviation Exhaust gas flow rate, pph #7	0.4 (b)	0.2 (b)	0.2 (b)	0.3 (b)	0.4 2.64	0.3 2.05	0.2 0.48	0.5 3.96	0.2 1.34
146	Standard deviation	(b)	(b)	(b)	(b)	0.86	0.78	0.17	0.06	0.26
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151 076	Standard deviation Exhaust gas cooler gas temperature, °F	(b) 100	(b) 101	(b) 91	(b) 81	(b) 87	(b) 114	(b) 79	(b) 85	(b) 86
076 152	Standard deviation Exhaust gas exit pres- sure, psia	2 (b)	1 (b)	1 (b)	0 (b)	1 (b)	22 (b)	1 (b)	3 (b)	1 (b)
152 C29	Standard deviation Coolant heat transfer, Btu/hr	(b) 165060	(b) 112770	(b) 106720	(b) 108730	(b) 102300	(b) 98475	(b) 69651	(b) 151150	(b) 74111
C29	Standard deviation	3385	4181	2317	2552	4880	2719	1463	6160	1721
C37	Exhaust gas flow rate, lb/hr	203	239	237	244	666	593	383	669	559
C37	Standard deviation	3	3	6	1	91	90	34	8	46
C38 C38	Gas heat transfer, Btu/hr Standard deviation	54129 2359	21344 1443	25235 2966	18469 631	26009 5631	22875 5286	6132 1465	59026 2233	10064 1481
C39	Gas velocity at grid, ft/sec	5.6	3.7	3.9	3.8	3.9	3.7	2.6	5.8	2.6
C39	Standard deviation	0.1	0.1	0.1	0	0.1	0.1	0	0.1	0
C40	Gas velocity at 26-inch bed, ft/sec	5.9	3.9	4.0	3.9	4.6	4.2	2.7	6.0	3.6
C40 C41	Standard deviation Gas velocity at 44-inch bed, ft/sec	0.1 2.7	0.1 1.8	0.1 1.9	0 1.8	0.6 2.1	0.5 1.9	0 1.2	0.1 2.8	0.3 1.6
C41	Standard deviation	0	0	0	0	0.2	0.2	0	0	0.1
C42	Gas velocity at 52-inch bed, ft/sec	2.2	1.4	1.5	1.4	1.7	1.5	1.0	2.2	1.3
C42	Standard deviation	0	0	0	0	0.2	0.2	0	0	0.1
C43	Gas velocity at 68-inch bed, ft/sec	1.8	1.1	1.2	0.8	1.4	1.3	0.8	1.8	1.1
C43	Standard deviation	0	0	0	0.3	0.2	0.2	0	0	0.1
C44	Gas velocity at 80-inch bed, ft/sec	1.4	0.9	0.9	0.9	1.0	0.9	0.6	1.4	0.8
C44	Standard deviation	0	0	0	0	0.1	0.1	0	1 1	0.1
C45	Gas velocity at 97-inch bed, ft/sec	1.1	0.7	0.7	0.7	0.8	0.7	0.5	1.1	0.6
C45	Standard deviation	0	0	0	0	0.1	0.1	0	0	0.1

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

(g) Continued. Combustor gas system data

	(g) con	itinuea.	Combus	stor gas	system	luata			
Data chan-	Parameter					Test			
nel		G8	G16	G22	G23	G24	G17	G18	G19
122	Gas cooler 4 coolant temperature, °F	78	77	75	77	80	78	82	83
122	Standard deviation	0	0	0	0	0	0	1	1
123	Gas cooler 3 coolant temperature, °F	80	79	76	80	84	80	86	87
123	Standard deviation	0	0	0	0	0	0	2	2
124	Gas cooler 2 coolant temperature, °F	79	79	76	79	84	80	85	87
124	Standard deviation	0	0	0	0	0	0	2	2
125	Gas cooler 1 coolant temperature, °F	78	76	74	75	79	77	82	82
125	Standard deviation	0	1	0	0	2	0	1	3
126	Gas cooler 4 gas temperature, F	456	460	375	450	510	393	465	472
126	Standard deviation	9	8	6	2	10	11	14	8
127	Gas cooler 3 gas temperature, °F	452	459	381	434	503	397	465	471
127	Standard deviation	10	8	6	2	5	11	14	7
128	Gas cooler 2 gas temperature, °F	474	484	398	481	547	431	507	513
128	Standard deviation	11	8	4	2	6	11	17	6
129	Gas cooler 1 gas temperature, °F	479	485	400	407	486	409	447	459
129	Standard deviation	8	7	5	6	47	14	24	30
130	Gas cooler total coolant temperature, °F	86	81	85	89	93	89	85	93
130	Standard deviation	2	1	1	0	2	2	1	3
132	Gas heat exchanger 4 wall temperature, F	449	450	365	464	547	419	398	391
132	Standard deviation	12	11	4	3	6	14	21	11
133	Gas heat exchanger 3 wall temperature, F	456	459	379	473	560	436	407	398
133	Standard deviation	13	10	4	2	10	13	19	8
134	Gas heat exchanger 2 wall temperature, F	496	505	424	530	607	480	449	438
134	Standard deviation	14	11	3	3	5	14	20	10
135	Gas heat exchanger 1 wall temperature, F	445	439	367	370	468	409	334	334
135	Standard deviation	9	10	4	7	64	17	35	35
142	Gas coolant flow rate, gal/min	14.7	14.7	14.2	14.1	14.3	14.9	14.5	12.6
142	Standard deviation	0	0.5	1.1	0.1	0.3	0.1	0.6	1.4
143	Gas cooler coolant outlet temperature, °F	82	81	77	81	86	82	88	89
143	Standard deviation	0	1	1	0	0	0	1	2

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	142 143	Standard deviation Gas cooler coolant outlet	0 82	0.5 81	1.1 77	0.1 81	0.3 86	0.1 82	0.6 88	1.4 89
	143 144	temperature, °F Standard deviation Exhaust gas tempera-	0 279		1 213	0 277	0 365	0 267	1 265	. 258 258
	144 145	ture, F Standard deviation Exhaust gas exit pres-	20 77.6		11 79.1	2 77.2	2 75.9	13 78.0	10 77.4	
	145 146	sure, psid Standard deviation Exhaust gas flow rate,	0.3 3.99	0.4 (b)	0.4 (b)	0.2 (b)	1.1 (b)	0.4 (b)	0.4 0.19	0.28 0.28
	146 151	pph Standard deviation Exhaust gas flow rate,	0.07 (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	0.11 (b)	0.03 (b)
	151 076	pph Standard deviation Exhaust gas cooler gas	(b) 94	(b) 117	(b) 90	(b) 99	(b) 103	(b) 96	(b) 92	(b)
	076 152	temperature, °F Standard deviation Exhaust gas exit pres-	1 (b)	28 (b)	(b)	0 (b)	1 (b)	3 (b)	2 (b)	(b)
	152 C29	sure, psia Standard deviation Coolant heat transfer,	(b) 103490	(b) 110140	(b) 80363	(b) 101630	(b) 142380	(b) 110970	(b) 137700	(b) 135550
	C29 C37	Btu/hr Standard deviation Exhaust gas flow rate,	3227 788	4981 230	4093 257	1814 229	2098 201	5569 234	2258 268	2263 295
	C37 C38 C38 C39	lb/hr Standard deviation Gas heat transfer, Btu/hr Standard deviation Gas velocity at grid,	23 34931 3335 3.9	27041	5 12029 1383 2.8	25411 574 3.7	3 53461 891 5.1	5 23791 2216 3.7	24 1785 215 4.7	(b) (b) 4.6
	C39 C40	ft/sec Standard deviation Gas velocity at 26-inch	0.2 5.0		0.1 2.9	0.1 3.9	0.1 5.4	0.1 3.9	0.1 4.9	0.1 4.8
	C40 C41	bed, ft/sec Standard deviation Gas velocity at 44-inch	0.1 2.3	0.1 2.0	0.1 1.3	0.1 1.8	0.1 2.5	0.1 1.8	0.1 2.3	0.1 2.2
i	C41 C42	bed, ft/sec Standard deviation Gas velocity at 52-inch	0 1.8		0 1.1	0 1.4	0 2.0	0.1 1.4	0 1.8	1.8
	C42 C43	bed, ft/sec Standard deviation Gas velocity at 68-inch	0 1.5	0 1.3	0 0.8	0 1.2	0 1.6	0 1.2	0 1.5	1.5
	C43 C44	bed, ft/sec Standard deviation Gas velocity at 80-inch	0 1.2		0 0.6	0 0.9	0 1.3	0 0.9	0 1.1	1.1
	C44 C45	bed, ft/sec Standard deviation Gas velocity at 97-inch	0 0.9		0 0.5	0 0.7	0 1.0	0 0.7	0 0.9	0.9
	C45	bed, ft/sec Standard deviation	0	0	0	0	0	0	0	(

TABLE 4. - Continued.

(g) Continued. Combustor gas system data

	(9)	concinaca.	COMPAS	, coi ga.	3 33300	m aucu				
Data chan_	Parameter					Test				
nel		Н1	H2	Н3	Н4	H5A	H5B	Н6	Н7	Н8
122	Gas cooler 4 coolant temperature, °F	71	82	85	86	90	96	89	88	88
122	Standard deviation	1	0	2	2	2	0	1	1	1
123	Gas cooler 3 coolant temperature, °F	71	83	87	88	93	99	89	91	92
123	Standard deviation	1	0	4	1	2	0	1	1	2
124	Gas cooler 2 coolant temperature, °F	83	83	86	88	95	101	94	95	94
124	Standard deviation	2	0	2	1	2	0	2	1	1
125	Gas cooler 1 coolant temperature, °F	79	79	81	84	88	92	87	88	85
125	Standard deviation	1	1	2	3	1	0	2	3	3
126	Gas cooler 4 gas temperature, °F	107	441	473	444	499	536	548	533	490
126	Standard deviation	3	11	6	16	11	17	42	15	34
127	Gas cooler 3 gas temperature, °F	107	484	515	483	594	633	715	679	571
127	Standard deviation	3	9	15	27	6	11	45	22	22
128	Gas cooler 2 gas temperature, °F	462	475	548	516	623	683	720	704	612
128	Standard deviation	40	8	25	15	10	2	49	13	19
129	Gas cooler 1 gas temperature, °F	523	566	567	559	692	793	715	728	607
129	Standard deviation	16	18	57	47	28	3	43	49	66
130	Gas cooler total coolant temperature, °F	91	93	92	91	99	103	90	88	96
130	Standard deviation	4	1	1	1	3	0	13	4	3
132	Gas heat exchanger 4 wal temperature, F		509	536	503	629	549	623	616	556
132	Standard deviation	4	7	11	27	8	27	59	19	32
133	Gas heat exchanger 3 wal temperature, F		511	521	488	622	548	644	620	537
133	Standard deviation	3	7	7	26	6	29	57	16	23
134	Gas heat exchanger 2 wal temperature, F		549	594	550	677	624	705	696	614
134	Standard deviation	47	6	19	21	15	25	59	13	25
135	Gas heat exchanger 1 wal temperature, F		497	483	469	644	628	605	634	486
135	Standard deviation	22	21	72	63	27	28	75	68	90
142	Gas coolant flow rate, gal/min	11.6	12.1	12.1	11.7	12.0	12.0	12.1	12.0	12.0
142	Standard deviation	0.6	0	0	0.6	0	105	0	0	0
143	Gas cooler coolant outle temperature, F	t 80	87	90	92	98	105	97	98	96
1.0	Ctandand dayiation	2		2	2		Λ	2	1	Ω

142	Standard deviation	0.6	0	0	0.6	0	0	0	0	0
143	Gas cooler coolant outlet temperature, °F	80	87	90	92	98	105	97	98	96
143	Standard deviation	2	0	2	2	1	0	2	1	0
144	Exhaust gas tempera- ture, F	195	264	325	297	394	384	396	399	328
144	Standard deviation	17	16	6	20	10	17	16	12	13
145	Exhaust gas exit pres- sure, psid	77.1	77.5	42.8	44.6	42.0	53.1	50.4	72.1	75.7
145	Standard deviation	0.4	0.2	0.3	0.3	1.2	0.2	3.2	0.5	0.3
146	Exhaust gas flow rate, pph	0.9	3.5	10.3	6.4	17.8	22.5	21.4	10.2	6.4
146	Standard deviation	0.4	1.3	1.5	1.3	4.7	0.1	1.3	1.4	0.5
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
076	Exhaust gas cooler gas temperature, °F	112	125	124	138	105	123	159	134	140
076	Standard deviation	21	21	24	.53	2	3	55	37	55
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr					147560				
C29	Standard deviation	8231	1360	4582	2660	2671	2224	11415	2235	2694
C37	Exhaust gas flow rate, lb/hr	379	687	740	651	775	1006	950	990	877
C37	Standard deviation	67	107	34	52	54	8	61	57	30
C38	Gas heat transfer, Btu/hr	10513	29466	42266	32488	58049	72526	74074	76825	50374
C38	Standard deviation	2579	7057	2892	5012	4610	3946	5201	5020	3104
C39	Gas velocity at grid, ft/sec	2.7	3.9	6.3	5.5	7.7	8.3	8.4	6.4	4.9
C39	Standard deviation	0	0	0.1	0.1	0.1	0.1	0.4	0	0.1
C40	Gas velocity at 26-inch bed, ft/sec	2.9	4.6	7.7	6.9	8.9	9.3	9.3	7.2	6.3
C40	Standard deviation	0.2	0.6	0.4	0.6	0.3	0.1	0.1	0.3	0.2
C41	Gas velocity at 44-inch bed, ft/sec	1.3	2.1	3.6	3.2	4.1	4.3	4.3	3.3	2.9
C41	Standard deviation	0.1	0.3	0.2	0.3	0.1	0	0.1	0.1	0.1
C42	Gas velocity at 52-inch bed, ft/sec	1.0	1.6	2.8	2.5	3.3	3.4	3.4	2.6	2.3
C42	Standard deviation	0.1	0.2	0.1	0.2	0.1	0	0.1	0.1	0.1
C43	Gas velocity at 68-inch bed, ft/sec	0.8	1.3	2.4	2.1	2.7	2.8	2.8	2.1	1.9
C43	Standard deviation	0.1	0.2	0.1	0.2	0.1	0	0	0.1	0.1
C44	Gas velocity at 80-inch bed, ft/sec	0.6	1.0	1.9	1.7	2.1	2.2	2.2	1.7	1.5
C44	Standard deviation	0	0.1	0.1	0.1	0.1	0	0	0.1	0
C45	Gas velocity at 97-inch bed, ft/sec	0.5	0.8	1.5	1.3	1.7	1.8	1.7	1.3	1.2
C45	Standard deviation	0	0.1	0.1	0.1	0.1	0	0	0	0

TABLE 4. - Continued.

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	Data	Parameter					Test				
	chan- nel		Н9	H10	H11	H12	H14	Н13	H15	H16	H18
	122	Gas cooler 4 coolant temperature, °F	86	87	82	74	79	71	70	77	79
	122	Standard deviation	2	1	2	0	1	2	1	3	1
	123	Gas cooler 3 coolant temperature, °F	90	92	86	75	80	72	73	78	80
	123	Standard deviation	3	1	3	_1	1	2	1	2	1
	124	Gas cooler 2 coolant temperature, °F	92	94	87	75	80	73	74	80	83
	124	Standard deviation	4	1	2	1	1	2	1	_3	1
٠	125	Gas cooler 1 coolant temperature, °F	86	86	· 78	72	76	69	64	75	80
	125	Standard deviation	3	3	4	1	2	2	2	3	4
	126	Gas cooler 4 gas temperature, °F	480	568	502	374	515	581	599	616	573
Parj	126	Standard deviation	45	8	22	6	57	15	11	16	16
FOLDOUT ERAME	127	Gas cooler 3 gas temperature, °F	553	649	568	422	613	572	636	682	670
9	127	Standard deviation	56	8	17	8	18	9	14	27	17
E E	128	Gas cooler 2 gas temperature, °F	584	691	608	445	654	569	648	679	650
R A	128	Standard deviation	60	7	17	8	_11	29	11	22	19
M	129	Gas cooler 1 gas temperature, °F	658	740	598	519	724	704	402	589	617
_	129	Standard deviation	68	56	87	26	34	35	252	94	40
	130	Gas cooler total coolant temperature, °F	90	84	81	77	81	67	79	87	85
	130	Standard deviation	3	1	1	1	2	2	4	2	2
	132	Gas heat exchanger 4 wall temperature, F	511	624	542	363	564	590	592	614	569
	132	Standard deviation	62	12	41	8	13	30	19	30	24
	133	Gas heat exchanger 3 wall temperature, F	504	601	519	361	561	601	568	609	587
	133	Standard deviation	60	8	32	7	9	38	16	27	20
	134	Gas heat exchanger 2 wall temperature, F	577	688	603	415	633	616	612	648	627
	134	Standard deviation	66	9	28	8	8	25	15	28	22
	135	Gas heat exchanger 1 wall temperature, F	550	617	449	381	592	573	259	454	494
	135	Standard deviation	68	74	118	25	13	30	162	124	65
	142	Gas coolant flow rate, gal/min	11.9	11.9	12.9	12.8	12.6	12.6	12.9	13.1	12.3
	142	Standard deviation	0.1	0.2	0.7	0.6	0.8	0.7	0.7	0.2	0.7
	143	Gas cooler coolant outlet temperature, °F	94	95	89	78	85	76	76	84	88
SHEW SHEAR ALL SHE	143	Standard deviation		and the second			constrain 1.	2		2	$\mathbf{L}_{\mathbf{k}}$

142 143	Standard deviation Gas cooler coolant outlet	0.1 94	0.2 95	0.7 89	0.6 78	0.8 85	0.7 76	0.7 76	0.2 84	0.7 88
143	temperature, F Standard deviation	3	1	1	1	1	2	1	2	1
144	Exhaust gas tempera- ture, F	298	385	330	200	335	287	280	327	283
144 145	Standard deviation Exhaust gas exit pres- sure, psid	28 76.1	17 72.8	9 75.0	8 77 . 9	7 74.4	21 76.8	12 44.3	16 41.7	7 42.8
145 146	Standard deviation Exhaust gas flow rate, pph	1.0 6.5	0.4 20.4	0.4 10.4	0.1 3.2	1.6 7.2	0.1 2.1	0.4 4.4	1.0 10.1	0.5 6.7
146	Standard deviation	1.6	5.5	1.1	1.5	1.0	0.5	0.7	0.7	1.1
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151 076	Standard deviation Exhaust gas cooler gas temperature, °F	(b) 194	(b) 138	(b) 83	(b) 79	(b) 81	(b) 106	(b) 83	(b) 95	(b) 72
076 152	Standard deviation Exhaust gas exit pres- sure, psia	113 (b)	44 (b)	6 (b)	7 (b)	13 (b)	32 (b)	(p)	1 (b)	4 (b)
152 C29	Standard deviation Coolant heat transfer, Btu/hr	(b) 125000	(b) 153600	(b) 145980	(b) 74257	(b) 122640	(b) 84990	(b) 104010	(b) 132970	(b) 140730
C29 C37	Standard deviation Exhaust gas flow rate,	19105 894	9213 1250	1492 1067	2498 685	2641 910	9871 541	5847 565	3986 726	1966 656
C37	lb/hr Standard deviation	90	98	55	145	65	69	35	31	44
C38 C38	Gas heat transfer, Btu/hr Standard deviation	45792 9458	92281 12061	62905 2166	17683 5085	55206 5362	31418 4043	26292 2705	41750 1884	31363 2162
C39	Gas velocity at grid, ft/sec	4.8	6.0	5.0	2.6	4.9	4.1	5.6	6.9	6.8
C39 C40	Standard deviation Gas velocity at 26-inch bed, ft/sec	0.1 6.5	0 9.0	0 7 . 8	0 4.5	0.1 6.7	0 4.3	0.1 6.1	0.1 7.7	0.1 7.6
C40 C41	Standard deviation Gas velocity at 44-inch bed, ft/sec	0.6 3.0	0.7 4.1	0.4 3.6	0.9 2.1	0.3 3.1	0 2.0	0.2 2.8	0.3 3.5	0.3 3.5
C41	Standard deviation	0.3	0.3	0.2	0.4	0.2	0	0.1	0.1	0.1
C42	Gas velocity at 52-inch bed, ft/sec	2.3	3.3	2.8	1.6	2.4	1.5	2.2	2.8	2.8
C42 C43	Standard deviation Gas velocity at 68-inch bed, ft/sec	0.2 1.9	0.3 2.7	0.1 2.3	0.3 1.3	0.1 2.0	0 1.3	0.1 1.9	0.1 2.4	0.1 2.3
C43	Standard deviation	0.2	0.2	0.1	0.3	0.1	0	0.1	0.1	0.1
C44	Gas velocity at 80-inch bed, ft/sec	1.5	2.1	1.8	1.0	1.5	1.0	1.5	1.9	1.8
C44	Standard deviation	0.1	0.2	0.1	0.2	0.1	0	0.1	0.1	0.1
C45	Gas velocity at 97-inch bed, ft/sec	1.2	1.7	1.5	1.0	1.2	0.8	1.2	1.5	1.4
C45	Standard deviation	0.1	0.1	0.1	0.2	0.1	0	0	0.1	0.1

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued. (g) Continued. Combustor gas system data

	(3)		5				
Data chan—	Parameter			Te	est		
nel		H19	H20	H23	H24	H25	H26
122	Gas cooler 4 coolant temperature, °F	79	80	81	81	81	80
122	Standard deviation	0 80	0	1 83	0 83	1 83	0 82
123	Gas cooler 3 coolant temperature, °F		82				
123 124	Standard deviation Gas cooler 2 coolant	0 82	0 84	1 87	1 86	1 85	0 85
124	temperature, °F Standard deviation	1	1	1	1	1	0
125	Gas cooler 1 coolant temperature, °F	78	79	81	81	80	81
125 126	Standard deviation Gas cooler 4 gas	1 575	1 582	1 586	1 414	1 378	0 445
	temperature, °F	7					
126 127	Standard deviation Gas cooler 3 gas	632	14 644	11 649	87 569	20 550	63 565
127	temperature, °F Standard deviation	19	16	14	40	16	21
128	Gas cooler 2 gas temperature, °F	646	650	658	615	608	601
128 129	Standard deviation Gas cooler 1 gas	10 685	16 695	10 715	18 631	14 576	6 644
129	temperature, °F Standard deviation	29	24	20	58	27	33
130	Gas cooler total coolant temperature, °F	84	82	84	84	79	74
130	Standard deviation	5	8	5 571	1	2	1
132	Gas heat exchanger 4 wall temperature, F	562	567	571	554	548	531
132 133	Standard deviation Gas heat exchanger 3 wall	13 569	20 566	13 576	6 561	18 554	3 545
133	temperature, °F Standard deviation	14	19	10	7	14	5
134	Gas heat exchanger 2 wall temperature, F	629	635	648	618	607	596
134	Standard deviation	8	19	11	10	13	5
135	Gas heat exchanger 1 wall temperature, F	563	576	603	582	542	568
135	Standard deviation	39	32	25	30	39	3
142	Gas coolant flow rate, gal/min	15.1	14.8	13.4	14.0	14.6	15.4
142	Standard deviation	0.5	0.3	0.6	0.5	0.3	0.3
143	Gas cooler coolant outlet temperature, °F	86	88	90	89	88	87
143	Standard deviation	1 211	0	1 217	1	1 220	0

142	Standard deviation	0.5	0.3	0.6	0.5	0.3	0.3
143	Gas cooler coolant outlet temperature, °F	86	88	90	89	88	87
143 144	Standard deviation Exhaust gas tempera-	1 311	0 307	1 317	1 317	1 330	0 337
	ture, °F						
144	Standard deviation	16	12	12	11	10	2
145	Exhaust gas exit pres- sure, psid	76.1	75.7			75.5	75.6
145	Standard deviation	0.2	0.4	0.2	0.2	0.2	0.2
146	Exhaust gas flow rate, pph	3.9	4.2	3.8	3.9	4.2	5.5
146	Standard deviation	1.0	1.0	1.0	1.1	1.0	0.3
151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)
151	pph Standard deviation	(<u>b</u>)	(b)	(b)	(b)	(b)	(b)
076	Exhaust gas cooler gas temperature, F	73	87	78	81	74	68
076	Standard deviation	1	20	1	2	3	1
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr	144770	153180	154480	149650	150940	154210
C29	Standard deviation	2435	2969	5757	2233	2287	1737
C37	Exhaust gas flow rate, lb/hr	702	728	691	697	719	818
C37	Standard deviation	75	79	83	101	75	20
C38	Gas heat transfer, Btu/hr	40131	41149	41438	42225	43831	49566
C38	Standard deviation	5752	4634	3502	3963	4084	1481
C39	Gas velocity at grid, ft/sec	4.6	4.8	4.9	4.8	4.9	4.8
C39	Standard deviation	0.1	0.1	0.1	0	0	0
C40	Gas velocity at 26-inch bed, ft/sec	5.1	5.4	5.3	5.3	5.3	5.7
C40	Standard deviation	0.3	0.4	0.2	0.3	0.2	0.1
C41	Gas velocity at 44-inch bed, ft/sec	2.4	2.5	2.4	2.5	2.5	2.6
C41	Standard deviation	0.1	0.2	0.1	0.1	0.1	0.1
C42	Gas velocity at 52-inch bed, ft/sec	1.9	2.0	2.0	2.0	2.0	2.1
C42	Standard deviation	0.1	0.1	0.1	0.1	0.1	0.1
C43	Gas velocity at 68-inch bed, ft/sec	1.5	1.7	1.6	1.6	1.6	1.8
C43	Standard deviation	0.1	0.1	0	0.1	0.1	0
C44	Gas velocity at 80-inch bed, ft/sec	1.2	1.3	1.3	1.3	1.3	1.4
C44	Standard deviation	0.1	0.1	0	0.1	0.1	0
C45	Gas velocity at 97-inch bed, ft/sec	1.0	1.0	1.0	1.0	1.0	1.1
C45	Standard deviation	0.1	0.1	0	0	0	0

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

(g)	Continued.	Combustor	gas	system	data
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	(3)			J						
Data	Parameter					Test				
chan- nel		11	12	13	14	I5A	I5B	16	17	18
122	Gas cooler 4 coolant temperature, °F	81	85	78	75	77	79	81	83	79
122 123	Standard deviation	0 83	2 85	1 79	1 76	0 78	0 81	0 83	0 84	0 81
	Gas cooler 3 coolant temperature, °F									
123 124	Standard deviation Gas cooler 2 coolant	0 88	2 93	1 84	1 78	0 82	1 84	0 89	1 92	0 87
124	temperature, °F	1	3	2	1	0	1	1	1	1
125	Standard deviation Gas cooler 1 coolant	84	84	81	75	79	77	82	85	80
	temperature, °F	0						2	а	0
125 126	Standard deviation Gas cooler 4 gas	0 607	7 619	1 395	1 310	1 373	6 408	3 482	4 615	2 539
	temperature, °F									
126 127	Standard deviation Gas cooler 3 gas	15 713	56 776	8 549	5 403	6 513	19 556	59 647	16 746	8 633
127	temperature, °F	713	776	549	403	212	550	047	740	055
127	Standard deviation	20	30	8	18	9	24	32	20	3
128	Gas cooler 2 gas temperature, °F	713	778	572	453	544	581	660	739	623
128	Standard deviation	13	16	7	6	7	20	19	14	6
129	Gas cooler 1 gas	756	729	571	471	553	460	634	755	654
129	temperature, F Standard deviation	18	172	10	7	10	196	24	57	34
130	Gas cooler total coolant	69	77	71	68	65	65	72	77	76
130	temperature, F Standard deviation	4	2	2	2	0	0	2	1	1
132	Gas heat exchanger 4 wall	620	615	496	405	484	531	597	575	474
120	temperature, F	7.1	0.7	0.0	6	10	26	_	٥٢	17
132 133	Standard deviation Gas heat exchanger 3 wall	11 640	27 649	23 523	6 436	10 501	36 542	5 627	25 608	17 489
	temperature, °F									
133	Standard deviation	11	28	23	13	12	29	6	20	15
134	Gas heat exchanger 2 wall temperature, F	686	695	565	469	546	585	667	659	546
134	Standard deviation	10	25	22	10	9	26	4	_18	13
135	Gas heat exchanger 1 wall temperature, F	651	607	533	447	523	473	583	575	439
135	Standard deviation	9	96	23	7	8	125	60	76	63
142	Gas coolant flow rate, gal/min	12.1	12.9	12.3	12.6	12.8	12.6	13.7	14.3	14.4
142	Standard deviation	0	0.7	0.6	0.8	0.2	0	0.3	0.2	0.2 87
143	Gas cooler coolant outlet temperature, °F	92	95	86	80	84	85	89	93	0/
		_	_		4		-	•	_	

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142 143	Standard deviation Gas cooler coolant outlet	0 92	0.7 95	0.6 86	0.8 80	0.2 84	0 85	0.3 89	0.2 93	
143	temperature, °F Standard deviation	0	2	1	1	1	1		0	
144	Exhaust gas tempera-	368	404	298	241	306	324		394	
144 145	ture, F Standard deviation Exhaust gas exit pres-	9 80.4	15 76.5	10 82.0	4 83.1	9 82 . 1	4 80.9	9 80.1	11 76.8	81.4
	sure, psid									
145 146	Standard deviation Exhaust gas flow rate,	0.5 13.9	1.4 18.6	0.2 10.6	0.3 8.3	0.1 11.2	0.5 11.2	0.3 11.8	0.6 17.4	
146	pph Standard deviation	0.6	0.8	0.3	0.3	0.3	0.7	1.2	2.0	0.8
151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151 076	pph Standard deviation Exhaust gas cooler gas	(b) 94	(b) 88	(b) 80	(b) 72	(b) 68	(b) 70	(b) 89	(b) 82	(b) 74
076	temperature, F Standard deviation	14	1	3	2	0	1	6	1	
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
152 C29	Standard deviation Coolant heat transfer, Btu/hr	(b) 158510	(b) 189760	(b) 130960	(b) 93127	(b) 118420	(b) 124030	(b) 160180	(b) 193050	(b) 154550
C29 C37	Standard deviation Exhaust gas flow rate,	7958 1093	10932 1142	1631 1041	2358 985	1040 1060		2257 1019	2391 1124	1921 1062
C37	lb/hr Standard deviation	16	17	9	16	10	25	39	41	25
C38	Gas heat transfer, Btu/hr	75286	89132	53167	35067	53876	59585	71164	85652	53022
C38	Standard deviation	3385	5577	3132	1369 3.2	3359	2258 4.7	4687 5.7	6019 7.1	3059 5.3
C39	Gas velocity at grid, ft/sec	5.7	7.0	4.6		4.4				
C39 C40	Standard deviation Gas velocity at 26-inch	0.1 7.9	0.1 8.1	0 7.4	0 6.4	0.1 7.0	0 6.7	0.1 7.2	0.1 7.9	0.1 7.6
C40	bed, ft/sec Standard deviation	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.1
C41	Gas velocity at 44-inch bed, ft/sec	3.6	3.7	3.4	3.0	3.2	3.1	3.3	3.7	3.5
C41	Standard deviation	0.1	0.1	0	0.1	0	0.1	0.1	0.2	
C42	Gas velocity at 52-inch bed, ft/sec	2.9	3.0	2.7	2.3	2.6	2.5	2.7	2.9	2.8
C42	Standard deviation	0.1	0.1	0	0	0	0.1	0.1	0.1	(
C43	Gas velocity at 68-inch bed, ft/sec	2.4	2.5	2.2	1.9	2.1	2.1	2.2	2.4	2.3
C43	Standard deviation	0.1	0.1	0	0	0	0.1	$0.1_{1.7}$	0.1	1 (
C44	Gas velocity at 80-inch bed, ft/sec	1.9	1.9	1.8	1.5	1.7	1.6	1.7	1.9	1.8
C44	Standard deviation	0	0	0	0	0	0	0.1	0.1	1 .
C45	Gas velocity at 97-inch bed, ft/sec	1.5	1.6	1.4	1.2	1.3	1.3	1.4	1.5	1.4
C45	Standard deviation	0	0	0	0	0	0	0.1	0.1	(

TABLE 4. - Continued.

	. •		•				
Data chan-	Parameter			Te	est		
nel		19	I10A	I10B	I11	I12	I13
122	Gas cooler 4 coolant temperature, °F	78	77	75	78	79	77
122	Standard deviation Gas cooler 3 coolant temperature, °F	1	1	0	1	0	1
123		79	78	77	80	81	78
123	Standard deviation Gas cooler 2 coolant temperature, °F	2	1	1	1	1	1
124		83	81	79	83	85	81
124	Standard deviation Gas cooler 1 coolant temperature, °F	2	2	1	1	1	1
125		77	77	73	77	80	78
125	Standard deviation Gas cooler 4 gas temperature, °F	1	1	0	1	1	1
126		411	334	306	341	403	325
126	Standard deviation Gas cooler 3 gas temperature, °F	47	26	25	14	21	11
127		533	435	433	469	561	487
127	Standard deviation Gas cooler 2 gas temperature, °F	32	43	16	7	17	18
128		565	483	473	507	605	530
128	Standard deviation Gas cooler 1 gas temperature, °F	10	33	18	7	18	21
129		570	520	451	523	632	534
129	Standard deviation Gas cooler total coolant temperature, °F	62	31	12	33	17	21
130		74	72	73	73	63	96
130	Standard deviation Gas heat exchanger 4 wall temperature, F	2	1	1	2	5	2
132		454	442	448	475	604	453
132	Standard deviation Gas heat exchanger 3 wall temperature, F	52	27	17	14	23	15
133		473	462	455	483	593	458
133	Standard deviation Gas heat exchanger 2 wall temperature, F	48	24	16	13	21	20
134		527	515	507	540	637	512
134	Standard deviation Gas heat exchanger 1 wall temperature, F	48	28	22	8	15	24
135		457	500	432	498	614	493
135	Standard deviation Gas coolant flow rate, gal/min	25	25	17	40	35	25
142		13.9	11.7	12.7	12.4	13.1	13.3
142	Standard deviation Gas cooler coolant outlet temperature, °F	0.9	0.8	0	0.7	0.2	0.6
143		84	83	80	84	86	83
143	Standard deviation	1	1	0	1	1	

	gal/min						
142	Standard deviation	0.9	0.8	0	0.7	0.2	0.6
143	Gas cooler coolant outlet temperature, °F	84	83	80	84	86	83
143	Standard deviation	1	1	0	1	1	1
144	Exhaust gas tempera-	285	269	235	281	371	310
	ture, °F						
144	Standard deviation	12	18	5	14	11	12
145	Exhaust gas exit pres- sure, psid	82.5	83.4	83.1	82.2	72.9	76.8
145	Standard deviation	0.4	0.9	0.3	0.5	0.8	0.9
146	Exhaust gas flow rate, pph	11.5	9.7	7.5	8.7	3.7	9.8
146	Standard deviation	0.8	1.5	0.4	1.4	1.0	2.2
151	Exhaust gas flow rate,	(d)	(b)	(b)	(b)	(b)	(b)
151	pph	(b)	(b)	(b)	(b)	(b)	(b)
076	Standard deviation Exhaust gas cooler gas	71	73	75	75	119	434
0,0	temperature, F	, -	, ,	, 0	, 0		
076	Standard deviation	1	1	0	2	51	11
152	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)
	sure, psia	` '	` '	• •	, ,	, ,	
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr	127590	100630	98240	111710	133800	118060
C29	Standard deviation	4429	9649	2115	2970	4588	4056
C37	Exhaust gas flow rate, lb/hr	1087	1030	946	969	579	951
C37	Standard deviation	26	55	24	65	81	77
C38	Gas heat transfer, Btu/hr	51580	44690	32853	44519	60403	57515
C38	Standard deviation	4018	6655	1658	6756	5292	4869
C39	<pre>Gas velocity at grid, ft/sec</pre>	4.6	3.6	3.4	3.9	5.2	7.1
C39	Standard deviation ·	0.1	0.4	0	0	0.1	0.3
C40	Gas velocity at 26-inch bed, ft/sec	7.0	6.6	6.0	6.2	5.5	7.5
C40	Standard deviation	0.2	0.4	0.1	0.5	0.1	0.3
C41	Gas velocity at 44-inch bed, ft/sec	3.2	3.0	2.7	2.9	2.5	3.5
C41	Standard deviation	0.1	0.2	0.1	0.2	0	0.1
C42	Gas velocity at 52-inch bed, ft/sec	2.6	2.4	2.2	2.3	2.0	2.8
C42	Standard deviation	0.1	0.2	0.1	0.2	0	0.1
C43	Gas velocity at 68-inch bed, ft/sec	2.1	2.0	1.8	1.9	1.7	2.2
C43	Standard deviation	0.1	0.1	0	0.1	0	0.1
C44	Gas velocity at 80-inch bed, ft/sec	1.7	1.5	1.4	1.5	1.3	1.8
C44	Standard deviation	0	0.1	0	0.1	0	0.1
C45	Gas velocity at 97-inch	1.3	1.2	1.1	1.2	1.0	1.4
5.0	bed, ft/sec		÷ • i	***			
C45	Standard deviation	0	0.1	0	0.1	0	0.1

TABLE 4. - Continued.

(g) Continued. Combustor gas system data

	(9) contin	ucu• 0011	1505001	gus 5) c						
Data	Parameter					Test				
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5	
122	Gas cooler 4 coolant temperature, °F	79	224	187	268	262	128	261	265	
122	Standard deviation	8	101	105	74	98	96	106	114	
123	Gas cooler 3 coolant temperature, °F	81	222	201	285	240	126	263	265	
123	Standard deviation	11	105	118	80	86	96	105	114	
124	Gas cooler 2 coolant temperature, °F	80	247	200	293	277	133	265	265	
124	Standard deviation	10	112	117	81	99	102	104	114	
125	Gas cooler 1 coolant temperature, F	76	232	184	276	269	125	265	264	
125	Standard deviation	410	111	103	77 265	97 267	92 05	105	114	
126	Gas cooler 4 gas temperature, F	419	274	240	365	367	85	377	353	
126	Standard deviation	202	154	156	102	143	32	210	182	
127	Gas cooler 3 gas temperature, F	368	268	229	348	310	116	378	367	
127	Standard deviation	160	155	146	95 365	115	84 120	212	189 275	
128	Gas cooler 2 gas temperature, F	379	306	242	365	368	138	436	375	
128	Standard deviation	181	158	156	102	141	115	242	194	
129	Gas cooler 1 gas temperature, F	503	284	251	383	389	130	408	388	
129	Standard deviation	212	158	165	111	155	105	229	204	
130	Gas cooler total coolant temperature, F	.83	90	143	111	91	87	87	88	
130	Standard deviation	8	5	3	30	6	8.	10	8	
132	Gas heat exchanger 4 wall temperature, F	391	263	236	358	360	144	403.	374	
132	Standard deviation	174	144	153	98	139	119	229	195	
133	Gas heat exchanger 3 wall temperature, F	390	268	232	351	208	121	362	364	
133	Standard deviation	160	148	149	96	68	92 155	218	192	
134	Gas heat exchanger 2 wall temperature, F	406	302	255	384	380	155	410	377	
134	Standard deviation	183	153	169	107	148	133	232	197	
135	Gas heat exchanger 1 wall temperature, F	408	255	222	340	335	145	369	366	
135	Standard deviation	161	137	140	94	128	118	210	189	
142	Gas coolant flow rate, gal/min	13.2	(b)	1.4	1.4	1.3	(b)	0.9	0.6	
142	Standard deviation	0.5	(p)	0.2	0.3	0.5	(p)	0.8	0	
143	Gas cooler coolant outlet temperature, °F	82	78	76	80	78	76	80	71	
143	Standard deviation	7	3	4	2	4	3	4	6	
144	Exhaust gas tempera-	208	240 ·	255	223 m	254	246	347		na verstände ständlichte som entschaften beträtte stätte verschaft i som eine verschaft i den eine verschaft s

142	Standard deviation	0.5	(b)	U.Z	U:3	U:5	(D)		
143	Gas cooler coolant outlet temperature, °F	82	78	76	80	78	76	80	71
143	Standard deviation	7	3	4	2	4	3	4	6
144	Exhaust gas tempera- ture, °F	208	240	255	223	254	246	347	270
144	Standard deviation	62	60	72	35	41	84	55	50
145	Exhaust gas exit pres- sure, psid	109.8	37.1	42.4	34.6	35.3	39.9	42.0	34.1
145	Standard deviation	16.9	14.7	17.4	8.3	10.2	16.8	18.7	10.5
146	Exhaust gas flow rate, pph	(b)	83.8	84.1	84.6	83.2	87.1	(b)	0.1
146	Standard deviation	(b)	6.2	4.2	2.4	4.2	7.2	(b)	0
151	Exhaust gas flow rate, pph	(b)							
151	Standard deviation	(b)							
076	Exhaust gas cooler gas temperature, °F	156	191	224	139	160	294	224	160
076	Standard deviation	71	121	135	75	94	103	173	89
152	Exhaust gas exit pres- sure, psia	(b)							
152	Standard deviation	(b)							
C29	Coolant heat transfer, Btu/hr	88280	3244	5157	4697	5455	(b)	4479	581
C29	Standard deviation	44229	3747	2257	1108	2394	(b)	5434	1262
C37	Exhaust gas flow rate, lb/hr	(b)							
C37	Standard deviation	(b)							
C38	Gas heat transfer, Btu/hr	18207	25371	28900	23779	28380	31367	46149	36480
C38	Standard deviation	9169	11950	13049	5949	7633	14843	10637	7675
C39	<pre>Gas velocity at grid, ft/sec</pre>	4.8	5.0	5.2	4.6	4.9	6.1	4.6	5.1
C39	Standard deviation	2.1	1.6	1.6	1.2	1.5	2.9	1.0	1.5
C40	Gas velocity at 26-inch bed, ft/sec	4.8	5.0	5.3	4.7	5.1	6.1	4.8	5.1
C40	Standard deviation	1.9	1.4	1.6	1.0	1.3	2.5	0.9	1.2
C41	Gas velocity at 44-inch bed, ft/sec	2.2	2.4	2.4	2.2	2.3	2.9	2.2	2.4
C41	Standard deviation	0.8	0.6	0.7	0.4	0.6	1.1	0.4	0.5
C42	Gas velocity at 52-inch bed, ft/sec	1.8	1.9	1.9	1.7	1.9	2.3	1.8	1.9
C42	Standard deviation	0.6	0.5	0.6	0.3	0.4	0.9	0.3	0.4
C43	Gas velocity at 68-inch bed, ft/sec	1.5	1.5	1.6	1.4	1.6	1.9	1.4	1.5
C43	Standard deviation	0.5	0.4	0.5	0.3	0.4	0.7	0.3	0.4
C44	Gas velocity at 80-inch bed, ft/sec	1.1	1.2	1.2	1.1	1.2	1.4	1.1	1.2
C44	Standard deviation	0.4	0.3	0.4	0.2	0.3	0.5	0.2	0.3
C45	Gas velocity at 97-inch bed, ft/sec	0.9	0.9	0.9	0.8	0.9	1.1	0.9	0.9
C45	Standard deviation	0.3	0.3	0.3	0.2	0.2	0.4	0.2	0.2

 $^{\mathrm{b}}\mathrm{Data}$ or results were not obtained.

TABLE 4. - Continued.

	(37		0 0 0 . 0	- · · · · · · · ·	• • • • • •					
Data chan-	Parameter					Test				
nel		J1	J2	J3	J4	J5	J6	J7	J8	J9
122	Gas cooler 4 coolant temperature, °F	73	78	92	80	76	76	68	80	72
122	Standard deviation	1	1	1	1	1	1	0	2	5 72
123	Gas cooler 3 coolant temperature, °F	73	79	92	80	79	79	68	80	73
123 124	Standard deviation Gas cooler 2 coolant	1 74	1 81	2 109	1 84	1 94	2 91	0 70	2 84	5 73
	temperature, °F									
124 125	Standard deviation Gas cooler 1 coolant	1 73	1 79	3 90	1 79	3 80	2 74	0 65	2 80	5 71
	temperature, °F									
125 126	Standard deviation Gas cooler 4 gas	1 440	2 598	9 568	1 512	6 670	3 676	2 511	2 611	5 566
	temperature, °F									
126	Standard deviation	11	30	17	15 521	16	21	13	16 643	11
127	Gas cooler 3 gas temperature, °F	452	637	624	521	729	720	496	043	502
127	Standard deviation	14	19	21	14	16	17	18	14	8
128	Gas cooler 2 gas temperature, °F	403	562	610	543	712	721	527	660	522
128	Standard deviation	15	13	16	15	10	16	17	10	13
129	Gas cooler 1 gas temperature, F	527	672	637	604	760	773	578	724	655
129	Standard deviation	15	25	38	18	63	68	22	15	12
130	Gas cooler total coolant temperature, °F	71	75	48	65	79	82	69	53	70
130	Standard deviation	1	2	4	9	5	2	2	6	3
132	Gas heat exchanger 4 wall temperature, F	423	598	589	488	661_	687	473	588	415
132	Standard deviation	11	29	31	17	40	37	15	15	14
133	Gas heat exchanger 3 wall temperature, F	420	596	574	484	651	673	451	581	352
133	Standard deviation	18	30	25	18	34	29	17	14	25
134	Gas heat exchanger 2 wall temperature, F	455	620	651	545	707	738	514	644	419
134	Standard deviation	13	32	14	15	30	26	19	13	10
135	Gas heat exchanger 1 wall temperature, F	427	562	525	483	611	629	430	616	364
135	Standard deviation	17	27	78	28	73	83	36	13	14
142	Gas coolant flow rate, gal/min	13.3	12.2	12.5	12.4	11.9	11.9	11.7	12.9	12.3
142	Standard deviation	0.2	0.7	0	0	0.1	0.2	0.4	1.0	0.4
143	Gas cooler coolant outlet temperature, °F	77	85	102	87	90	89	74	87	76
143	Standard deviation	1	1		0	<u>2</u>	richeronica Land	ni) and and and the same	2	

ag varan	142	Standard deviation	0.2	0.7	0	0	0.1	0.2	0.4	1.0	0.4
	142	Gas cooler coolant outlet temperature, °F	77	85	102	87	90	89	74	87	76
	143	Standard deviation	1	1	1	0	2	1	1	2	5
	144	Exhaust gas tempera-	203	339	407	287	433	466	285	402	297
		ture, F				_			_		
	144	Standard deviation	70.0	75.0	11	6	19	11	3	15	11
	145	Exhaust gas exit pres- sure, psid	78.0	75.3	70.0	76.8	69.9	69.8	77.4	74.1	77.8
	145	Standard deviation	0.9	0.3	0.7	0.3	0.9	0.9	0.3	0.6	0.2
	146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		pph		7	(1.)		4	4. 3	(1.)	(1.)	(1.)
	151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	076	Exhaust gas cooler gas temperature, °F	82	78	81	74	92	95	83	105	80
	076	Standard deviation	7	2	0	2	1	1	4	32	1
	152	Exhaust gas exit pres-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		sure, psia									
	152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C29	Coolant heat transfer, Btu/hr			222440						61357
	C29	Standard deviation	4199	4937	7894	1978	7065	5681	2240	3591	2728
	C37	Exhaust gas flow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C37	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C38 C38	Gas heat transfer, Btu/hr Standard deviation	9694 1096	40766 1780	81499 2975	22808 1666	86681 4964	95441 3381	19536 895	60134 3983	18135 1509
	C39	Gas velocity at grid,	2.5	4.3	6.5	3.6	6.8	6.7	3.2	4.9	2.5
		ft/sec		, , ,							
	C39	Standard deviation	0.1	0	0.1	0.1	0.2	0.1	0	0.1	0
	C40	Gas velocity at 26-inch bed, ft/sec	2.6	4.5	7.0	3.7	7.1	7.2	3.2	5.1	2.5
	C40	Standard deviation	0.1	0	0.1	0.1	0.1	0.2	0	0.1	0
	C41	Gas velocity at 44-inch bed, ft/sec	1.2	2.1	3.2	1.7	3.3	3.3	1.5	2.3	1.2
	C41	Standard deviation	0	0	0	0	0.1	0.1	0	0	0
	C42	Gas velocity at 52-inch	0.9	1.6	2.6	1.3	2.6	2.7	1.2	1.9	1.0
		bed, ft/sec			-						
	C42	Standard deviation	0	0	0	0	0	0.1	0	0	0
	C43	Gas velocity at 68-inch bed, ft/sec	0.7	1.3	2.1	1.1	2.2	2.2	0.9	1.5	0.7
	C43	Standard deviation	0	0	0	0	0	0	0	0	0
	C44	Gas velocity at 80-inch bed, ft/sec	0.6	1.0	1.7	0.9	1.7	1.7	0.7	1.2	0.6
	C44	Standard deviation	0	0	0	0	0	0	0	0	0
	C45	Gas velocity at 97-inch	0.4	0.8	1.3	0.7	1.4	1.4	0.6	1.0	0.4
	C45	bed, ft/sec Standard deviation	0	0	0	0	0	0	0	0	0

(g) Continued. Combustor gas system data

				•	_					
Data	Parameter					Test				
chan- nel		K1	К3	K4	K2	K7	K8	K6	K5	K9
122	Gas cooler 4 coolant temperature, °F	75	77	91	75	75	79	78	89	76
122	Standard deviation	1	1	1	1	0	1	1	3	0
123	Gas cooler 3 coolant temperature, F	77	75	89	77	74	79	79	92	77
123	Standard deviation	2	1	7	_1	_1	_1	1	3	0
124	Gas cooler 2 coolant temperature, °F	77	78	99	77	74	78	79	102	79
124	Standard deviation	1	1	2	1	1	1	_1	6	_0
125	Gas cooler 1 coolant temperature, °F	74	74	97	73	71	76	77	99	78
125	Standard deviation	1	1	1	1	0	1	1	7	1
126	Gas cooler 4 gas temperature, °F	421	490	545	499	625	624	534	608	502
126	Standard deviation	119	38	10	17	30	12	8	30	15
127	Gas cooler 3 gas temperature, °F	413	352	583	447	506	594	505	678	510
127	Standard deviation	99	68	35	28	12	22	15	29	17
128	Gas cooler 2 gas temperature, °F	391	471	595	501	588	692	555	654	486
128	Standard deviation	99	29	14	17	21	18	8	48	18
129	Gas cooler 1 gas temperature, °F	517	499	647	564	579	780	652	746	616
129	Standard deviation	106	81	13	17	13	41	17	60	9
130	Gas cooler total coolant	68	74	80	84	84	85	85	89	92
	temperature, °F	2	2	2						
130	Standard deviation	458	500	554	1 475	1 552	1 537	0 407	2	0 483
132	Gas heat exchanger 4 wall temperature, F								557	
132	Standard deviation	58 450	32	10	33	28	13	19	24	10
133	Gas heat exchanger 3 wall temperature, 'F	458	365	536	470	495	533	393	563	460
133	Standard deviation	63	21	30	41	24	23	23	19	10
134	Gas heat exchanger 2 wall temperature, F	486	510	631	508	594	585	440	626	527
134	Standard deviation	53	26	11	29	35	15	18	28	9
135	Gas heat exchanger 1 wall temperature, F	484	414	590	454	418	563	435	603	538
135	Standard deviation	70	45	9	35	60	57	26	41	12
142	Gas coolant flow rate, gal/min	12.2	12.6	12.1	11.8	11.8	11.8	11.9	11.8	11.8
142	Standard deviation	0.1	0.1	0.1	0	0	0.1	0	0.4	0
143	Gas cooler coolant outlet temperature, °F	78	81	101	79	76	85	84	101	83
 143	Standard deviation	1	. 0	1	1	1	1	1	3	0

FOLDOUT FRAME

	gal/min		and the first of the second	A STATE OF THE STA	eree or or ne exemple com	en seur des estimatibles de said	aghachtairchimatha conact	E. S. L. L. o.	nasan Julian and Line.	Militaria interes de la composición de
142	Standard deviation	0.1	0.1	0.1	0	0	0.1	0	0.4	0
143	Gas cooler coolant outlet temperature, °F	78	81	101	79	76	85	84	101	83
143	Standard deviation	1	0	1	1	1	1	1	3	0
144	Exhaust gas tempera- ture, F	192	194	341	227	274	316	222	367	238
144	Standard deviation	27	10	19	10	17	11	17	13	15
145	Exhaust gas exit pres- sure, psid	16.8	19.6	40.0	78.6	78.4	75.8	78.3	71.3	78.4
145	Standard deviation	0.1	0.4	25.5	0.2	0.2	0.2	0.2	0.5	0.3
146	Exhaust gas flow rate, pph	0.08	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.02
146	Standard deviation	0		0	0	0	0	. 0	0	0
151	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
076	Exhaust gas cooler gas temperature, °F	94	78	75	78	77	80	75	80	80
076	Standard deviation	37	12	4	1	0	1	2	3	0
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr		102300		80501		108450		207410	
C29	Standard deviation	5509	2136	6435	6861	4457	4048	7349	14256	2177
C37	Exhaust gas flow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C37	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C38	Gas heat transfer, Btu/hr	12914	10193	60485	12577	17159	39864	14974	67494	15920
C38	Standard deviation	5071	2540	4766	1100	1959	2141	2069	3378	675
C39	Gas velocity at grid, ft/sec	4.2	3.0	6.3	2.7	2.7	4.6	3.1	6.6	3.1
C39	Standard deviation	0.1	0.1	0.1	0	0 2.7	0 4.7	0	0.1	0 3.2
C40	Gas velocity at 26-inch bed, ft/sec	4.2	3.2	6.6	2.8			3.2	6.8	
C40	Standard deviation	0.1	0.1	0.1	0	1 2	0	1 5	0.1	0
C41	Gas velocity at 44-inch bed, ft/sec	1.9		3.0	1.3		2.2	1.5		1.5
C41	Standard deviation	0		0	0	0	1 0	0	0	0
C42	Gas velocity at 52-inch bed, ft/sec	1.6	1.2	2.4	1.0	1.0	1.8	1.2	2.5	1.2
C42	Standard deviation	0		0	0	0	0	0	0	0
C43	Gas velocity at 68-inch bed, ft/sec	1.2	0.9	2.0	0.8	0.8	1.4	1.0	2.1	0.9
C43	Standard deviation	0	0	0	0	0	0	0	0	0
C44	Gas velocity at 80-inch bed, ft/sec	0.9	0.7	1.6	0.6	0.6	1.1	0.7	1.6	0.7
C44	Standard deviation	0	0	0	0	0	0	0	0	0
C45	Gas velocity at 97-inch bed, ft/sec	0.7	0.6	1.2	0.5	0.5	0.9	0.6	1.3	0.6
C45	Standard deviation	0	0	0	0	0	0	0	0	0

TABLE 4. - Continued.

		(3)		•	•				
	Data	Parameter				Test			
	chan- nel		K10	K12	K11	K14	K13	K15	K16
	122	Gas cooler 4 coolant temperature, °F	78	80	89	62	61	75	75
	122	Standard deviation	0	1	2	6	7	1	1
	123	Gas cooler 3 coolant temperature, °F	79	81	94	64	63	77	78
	123	Standard deviation	0	1	3	6	7	0	1
	124	Gas cooler 2 coolant temperature, °F	81	83	102	65	64	78	78
	124	Standard deviation	1	1	2	6	7	0	2
	125	Gas cooler 1 coolant temperature, °F	78	81	105	64	62	76	77
	125	Standard deviation	_ 1	2	7	6	7	0	2
	126	Gas cooler 4 gas temperature, °F	518	576	585	493	443	516	508
	126	Standard deviation	9	12	31	15	19	4	5
	127	Gas cooler 3 gas temperature, °F	539	598	658	519	443	521	541
	127	Standard deviation	8	12	29	14	25	8	6
	128	Gas cooler 2 gas temperature, °F	503	556	627	513	426	520	523
	128	Standard deviation	9	17	37	9	23	4	2
	129	Gas cooler 1 gas temperature, °F	602	687	713	586	536	611	604
	129	Standard deviation	10	15	35	10	11	2	1
	130	Gas cooler total coolant temperature, F	91	90	91	91	88	90	93
	130	Standard deviation	0	0	0	1	1	0	1
•	132	Gas heat exchanger 4 wall temperature, F	499	572	589	454	433	489	476
	132	Standard deviation	. 8.	14		17	17	5	5
	133	Gas heat exchanger 3 wall temperature, F	488	556	617	465	442	487	488
	133	Standard deviation	8	17	36	12	17	3	2
	134	Gas heat exchanger 2 wall temperature, F	548	610	663	510	462	528	529
	134	Standard deviation	8	15	38	10	13	5	1
	135	Gas heat exchanger 1 wall temperature, F	503	594	646	499	465	529	526
	135	Standard deviation	15	20	31	13	15	3	1 1
	142	Gas coolant flow rate, gal/min	11.8	11.9	13.1	11.3	11.2	11.0	12.7
	142	Standard deviation	0	0	1.3	1.0	0.2	0	2.2
	143	Gas cooler coolant outlet temperature, °F	85	87	103	70	67	82	83
	143	Standard deviation	0	1	4	6	7		2

Standard deviation Gas cooler coolant outlet	0 85	0 87	1.3 103	1.0 70	0.2 67	0 82	2.2 83
temperature, °F		1	4	6	7	1	2
Exhaust gas tempera-	260	323	417	269	234	287	293
Standard deviation Exhaust gas exit pres-	3 77.9	11 76.4			7 78.7	3 78 . 2	57 . 9
Standard deviation Exhaust gas flow rate,	0.3 0.02	0.3 0.02	0.7 0.02	0.2 0.02	0.1 0.02	0.2 0.02	0.2 0.01
Standard deviation	0	0	0	0.01	0	0	0.01
Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Standard deviation Exhaust gas cooler gas	(b) 77	(b) 80	(b) 89	(b) 83	(b) 77	(b) 82	(b) 83
Standard deviation Exhaust gas exit pres-	1 (b)	2 (b)	2 (b)	4 (b)	(b)	1 (b)	(b)
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Coolant heat transfer, Btu/hr	109320				81593		
Standard deviation Exhaust gas flow rate, lb/hr	1064 (b)	4548 (b)	16437 (b)	3243 (b)	4042 (b)	1658 (b)	3462 (b)
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Gas heat transfer, Btu/hr	19216	36796	81222	18452	12552	21607	22166
							343
ft/sec							4.1
							0
bed, ft/sec							4.3
							0
bed, ft/sec							2.0
							0
bed, ft/sec					_		1.6
							0
Gas velocity at 68-inch bed, ft/sec	1.0	1.3	2.2	1.0	0.7	1.0	1.3
	0	0	0	0	0	0	0
Gas velocity at 80-inch bed, ft/sec	0.8	1.0	1.7	0.7	0.6	0.7	1.0
Standard deviation	0	0	0	0	0	0	0
Gas velocity at 97-inch bed, ft/sec	0.6	0.8	1.4	0.6	0.5	0.6	0.8
Standard deviation	0	0	0	0	0	0	0
	Gas cooler coolant outlet temperature, °F Standard deviation Exhaust gas temperature, °F Standard deviation Exhaust gas exit pressure, psid Standard deviation Exhaust gas flow rate, pph Standard deviation Exhaust gas flow rate, pph Standard deviation Exhaust gas cooler gas temperature, °F Standard deviation Exhaust gas exit pressure, psia Standard deviation Coolant heat transfer, Btu/hr Standard deviation Exhaust gas flow rate, lb/hr Standard deviation Gas heat transfer, Btu/hr Standard deviation Gas heat transfer, Btu/hr Standard deviation Gas velocity at grid, ft/sec Standard deviation Gas velocity at 26-inch bed, ft/sec Standard deviation Gas velocity at 44-inch bed, ft/sec Standard deviation Gas velocity at 52-inch bed, ft/sec Standard deviation Gas velocity at 68-inch bed, ft/sec Standard deviation Gas velocity at 80-inch bed, ft/sec Standard deviation Gas velocity at 97-inch bed, ft/sec Standard deviation Gas velocity at 97-inch bed, ft/sec	Gas cooler coolant outlet temperature, F Standard deviation 0 Exhaust gas tempera— 260 ture, F Standard deviation 3 Exhaust gas exit pres— 377.9 sure, psid Standard deviation 0.3 Exhaust gas flow rate, 0.02 pph Standard deviation 0 Exhaust gas flow rate, (b) pph Standard deviation (b) Exhaust gas cooler gas 77 temperature, F Standard deviation 1 Exhaust gas exit pres— (b) sure, psia 1 Standard deviation (b) Coolant heat transfer, 109320 Btu/hr Standard deviation 1064 Exhaust gas flow rate, (b) lb/hr Standard deviation 1064 Exhaust gas flow rate, (b) lb/hr Standard deviation 905 Gas velocity at grid, 3.3 ft/sec Standard deviation 0 Gas velocity at 26-inch 3.4 bed, ft/sec Standard deviation 0 Gas velocity at 44-inch 1.6 bed, ft/sec Standard deviation 0 Gas velocity at 52-inch 1.2 bed, ft/sec Standard deviation 0 Gas velocity at 68-inch 1.0 bed, ft/sec Standard deviation 0 Gas velocity at 80-inch bed, ft/sec Standard deviation 0 Gas velocity at 80-inch bed, ft/sec Standard deviation 0 Gas velocity at 97-inch 0.6	Gas cooler coolant outlet temperature, F Standard deviation 0 1 Exhaust gas temperature, F Standard deviation 3 11 Exhaust gas exit pressure, psid Standard deviation 0 0 0.3 Exhaust gas flow rate, 0.02 0.02 pph Standard deviation 0 0 0 Exhaust gas flow rate, (b) (b) pph Standard deviation (b) (b) (b) Exhaust gas cooler gas 77 Exhaust gas cooler gas 77 Exhaust gas exit pressure, psia Standard deviation 1 2 Exhaust gas exit pressure, psia Standard deviation (b) (b) (b) (coolant heat transfer, 109320 117220 Exhaust gas flow rate, (b) (b) (b) Exhaust gas flow rate, (b) (b) (b) Gas heat transfer, Btu/hr Standard deviation (b) (b) (b) Gas heat transfer, Btu/hr Standard deviation (b) (coolant heat transfer, Btu/hr Standard deviation (coolant h	Gas cooler coolant outlet temperature, F Standard deviation 0 1 4 A Exhaust gas temperature, F Standard deviation 3 11 28 Exhaust gas exit pressure, psid Standard deviation 0.3 0.3 0.7 Exhaust gas flow rate, pph Standard deviation 0.0 0 0 0 Exhaust gas flow rate, pph Standard deviation 0.0 0 0 0 Exhaust gas flow rate, pph Standard deviation 0 0 0 0 0 Exhaust gas flow rate, pph Standard deviation 0 0 0 0 0 Exhaust gas cooler gas 77 80 89 temperature, F Standard deviation 1 2 2 Exhaust gas exit pressure, psia Standard deviation 1 2 2 Exhaust gas exit pressure, psia Standard deviation 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Gas cooler coolant outlet temperature, F Standard deviation	Gas cooler coolant outlet temperature, F 85 87 103 70 67 Exhandard deviation 0 1 4 6 7 Exhaust gas temperature, F 260 323 417 269 234 Standard deviation 3 11 28 3 7 Exhaust gas exit pressure, psid 77.9 76.4 70.7 78.3 78.7 Standard deviation 0.3 0.3 0.7 0.2 0.1 Exhaust gas flow rate, pph 0.02 0.02 0.02 0.02 0.02 Standard deviation (b) (b)	Gas cooler coolant outlet temperature, F 85 87 103 70 67 82 Standard deviation 0 1 4 6 7 1 Exhaust gas temperature, F 7 7 76.4 70.7 78.3 78.7 78.2 Standard deviation 0.3 0.3 0.7 78.2 0.2 0.1 0.2 Exhaust gas flow rate, pph 0.02

TABLE 4. - Continued.

Data chan-	Parameter			Test		
nel		CAS0	CAS1	CAS2	CAS3	CAS4
122	Gas cooler 4 coolant temperature, °F	73	298	327	310	328
122	Standard deviation	6	95	49	76	49
123	Gas cooler 3 coolant temperature, °F	75	298	328	310	328
123 124	Standard deviation Gas cooler 2 coolant	7 76	95 298	48 327	76 310	49 328
	temperature, °F					
124	Standard deviation	7	95	49	76	49
125	Gas cooler 1 coolant temperature, °F	73	298	325	310	328
125	Standard deviation	6	96	52	76	48
126	Gas cooler 4 gas temperature, °F	461	409	445	511	509
126	Standard deviation	121	144	75	164	107
127	Gas cooler 3 gas	472	431	458	524	532
	temperature, F					
127	Standard deviation	122	154	78	165	108
128	Gas cooler 2 gas temperature, °F	495	433	477	540	540
128	Standard deviation	130	154	82	173	113
129	Gas cooler 1 gas temperature, °F	555	466	485	548	580
129	Standard deviation	157	168	95	175	124
130	Gas cooler total coolant	64	69	58	78	84
	temperature, °F					
130	Standard deviation	8	11	8	22	21
132	Gas heat exchanger 4 wall temperature, F	440	455	432	488	495
132	Standard deviation	110	162	70	155	103
133	Gas heat exchanger 3 wall temperature, F	452	448	425	478	485
133	Standard deviation	113	159	72	154	103
134	Gas heat exchanger 2 wall temperature, F	501	466	453	494	509
134	Standard deviation	127	167	77	156	106
135	Gas heat exchanger 1 wall	466	450	410	436	496
200	temperature, F	, 55				
135	Standard deviation	130	161	84	137	106
142	Gas coolant flow rate, gal/min	12.1	(b)	(b)	(b)	1.2
142	Standard deviation	1.6	(b)	(b)	(b)	0.2
143	Gas cooler coolant outlet temperature, °F	80	`71	`67	`60	70
143	Standard deviation	3	5	. 2	Δ	History Land

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142	Standard deviation	1.6	(b)	(b)	(b)	0.2
143	Gas cooler coolant outlet temperature, °F	80	71	67	60	70
143	Standard deviation	3	5	2	4	3
144	Exhaust gas tempera- ture, F	267	287	266	276	270
144	Standard deviation	29	48	29	41	40
145	Exhaust gas exit pres- sure, psid	95.4	68.2	14.5	14.6	14.3
145	Standard deviation	3.3	3.0	0.1	0.2	0.3
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	0.15	0.66
146	Standard deviation	(b)	(b)	(b)	0.09	0
151	Exhaust gas flow rate,	(b)	(b)	(b)	(b)	(b)
151	Standard deviation	(ħ)	(b)	(b)	(b)	(b)
076	Exhaust gas cooler gas temperature, °F	(b) 111	160	(b) 115	138	123
076	Standard deviation	80	74	58	88	60
152	Exhaust gas exit pres- sure, psia	(b)	(b)	(b)	(b)	(b)
152	Standard deviation	(b)	(b)	(b)	(b)	(b)
C29	Coolant heat transfer, Btu/hr	132750	(b)	(b)	(b)	(b)
C29	Standard deviation	17162	(b)	(b)	(b)	(b)
C37	Exhaust gas flow rate, lb/hr	(b)	(b)	(b)	(b)	(b)
C37	Standard deviation	(b)	(b)	(b)	(b)	(b)
C38	Gas heat transfer, Btu/hr	25449	42387	25391	29364	27353
C38	Standard deviation	7660	7710	8326	9199	7233
C39	<pre>Gas velocity at grid, ft/sec</pre>	4.6	4.9	4.5	4.5	4.5
C39	Standard deviation	1.3	1.3	1.1	1.4	0.6
C40	Gas velocity at 26-inch bed, ft/sec	4.8	4.9	4.7	4.7	4.6
C40	Standard deviation	1.2	1.0	1.0	1.3	0.6
C41	Gas velocity at 44-inch bed, ft/sec	2.2	2.3	2.1	2.1	2.1
C41	Standard deviation	0.5	0.5	0.4	0.6	0.3
C42	Gas velocity at 52-inch bed, ft/sec	1.8	1.8	1.7	1.7	1.7
C42	Standard deviation	0.4	0.4	0.4	0.5	0.2
C43	Gas velocity at 68-inch bed, ft/sec	1.4	1.5	1.4	1.4	1.4
C43	Standard deviation	0.4	0.3	0.3	0.4	0.2
C44	Gas velocity at 80-inch bed, ft/sec	1.1	1.1	1.1	1.1	1.0
C44	Standard deviation	0.2	0.2	0.2	0.3	0.1
C45	Gas velocity at 97-inch bed, ft/sec	0.8	0.9	0.8	0.8	0.8
C45	Standard deviation	0.2	0.2	0.2	0.2	0.1

 $b_{\mbox{\scriptsize Data}}$ or results were not obtained.

TABLE 4. - Continued.

	(g) Continu	iea. com	bustor	gas sys	tem dat	ā			
Data	Parameter				Te	est			
chan- nel		L1	L2	L3	L4	L5	L6	M1	M2
122	Gas cooler 4 coolant temperature, °F	338	305	338	338	338	338	338	316
122	Standard deviation	0	19	1	0	0	0	0	8
123	Gas cooler 3 coolant temperature, °F	338	313	338	338	338	338	338	312
123	Standard deviation	0	16	1	0	0	0	0	7
124	Gas cooler 2 coolant temperature, °F	338	310	338	338	338	338	338	311
124	Standard deviation	0	16	1	0	0	0	0	7
125	Gas cooler 1 coolant temperature, °F	338	302	338	338	338	338	338	319
125	Standard deviation	0	23	1	0	0	0	0	6
126	Gas cooler 4 gas temperature, °F	532	360	566	692	560	488	490	359
126	Standard deviation	66	22	29	75	32	11	10	17
127	Gas cooler 3 gas temperature, °F	550	343	576	756	642	516	525	377
127	Standard deviation	65	16	29	52	42	15	11	16
128	Gas cooler 2 gas temperature, °F	560	339	608	782	694	522	539	385
128	Standard deviation	69	14	25	38	32	13	12	18
129	Gas cooler 1 gas temperature, °F	610	402	589	804	704	553	522	398
129	Standard deviation	62	31	44	46	34	27	21	17
130	Gas cooler total coolant temperature, °F	68	58	82	78	68	66	99	71
130	Standard deviation	13	4	9	9	9	2	11	2
132	Gas heat exchanger 4 wall temperature, F	523	353	570	644	587	458	472	303
132	Standard deviation	68	34	31	38	27	16	11	19
133	Gas heat exchanger 3 wall temperature, F	440	307	496	541	465	392	407	261
133	Standard deviation	62	31	26	39	21	16	9	18
134	Gas heat exchanger 2 wall temperature, F	534	370	581	662	615	467	479	309
134	Standard deviation	73	41	32	36	27	18	10	19
135	Gas heat exchanger 1 wall temperature, F	516	341	476	644	603	457	425	310
135	Standard deviation	60	35	67	23	32	48	41	.17
142	Gas coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
142	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
143	Gas cooler coolant outlet temperature, °F	74	81	82	83	85	79	73	67
143	Standard deviation	9	2	1	1	1	0	1	0
144	Exhaust das tempera	201	167	250am	207	25E	225	212	1/15

geograpia i com lassociata	gai/min	a la est liber en adades en multiplicas a saluta paradem en en an	n	estado de estado	School State of the second second	न्यान अन्य । वन्यानुष्य कार्युक्तास्य	aetakhraki sasa	allumanites destrict	and the second section of the second
142	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
143	Gas cooler coolant outlet temperature, °F	74	81	82	83	85	79	73	67
143	Standard deviation	9	2	1	1	1	0	1	0
144	Exhaust gas tempera- ture, F	291	167	250	387	355	225	242	145
144	Standard deviation	22	18	25	30	33	13	10	9
145	Exhaust gas exit pres- sure, psid	15.0	14.8	15.0	15.1	14.7	14.6	14.6	13.9
145	Standard deviation	0.1	0.1	0.1	0.1	0.1	0	0.1	0
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Exhaust gas flow rate, pph	1.10	1.07	1.05	1.36	1.93	1.00	1.02	1.06
151	Standard deviation	0.07	0.08	0.07	0.72	1.35	0.03	0.04	0.09
076	Exhaust gas cooler gas temperature, °F	168	95	121	124	122	77	103	83
076	Standard deviation	95	7	31	12	48	1	5	3
152	Exhaust gas exit pres- sure, psia	54.9	51.4	70.6	67.2	63.9	60.9	87.5	64.5
152	Standard deviation	2.7	3.3	5.1	5.4	4.3	2.0	4.9	3.5
C29	Coolant heat transfer, Btu/hr	34	(b)	270	453	(b)	(b)	5012	1291
C29	Standard deviation	22	(b)	239	(b)	(b)	(b)	508	360
C37	Exhaust gas flow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C37	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C38	Gas heat transfer, Btu/hr	40141	5803	19803	71733	63853	15210	20098	3265
C38 C39	Standard deviation Gas velocity at grid,	5828 5.0	2162 2.1	3328 3.4	8535 6.3	9366 6.3	1448 3.2	1659 3.5	783 2.4
033	ft/sec	3.0	£. • I	3.7	0.5	0.0	J•L	3.3	۷. ۰
C39	Standard deviation	0.2	0.2	0.1	0.1	0.1	0	0.1	0.1
C40	Gas velocity at 26-inch bed, ft/sec	5.3	2.1	3.5	6.8	6.8	3.4	3.6	`2.5
C40	Standard deviation	0.1	0.2	0.1	0.2	0.1	0	0.1	0.1
C41	Gas velocity at 44-inch bed, ft/sec	2.5	1.0	1.6			1.6	1.6	1.1
C41	Standard deviation	0.1	0.1	1 2	0.1	0.1	0	1 2	0.1
C42	Gas velocity at 52-inch bed, ft/sec	2.0	0.8	1.3	2.5	2.5	1.3	1.3	0.8
C42	Standard deviation	0	0.1	0	0.1	0.1	0	0	0
C43	Gas velocity at 68-inch	1.6	0.6	1.1	2.1	2.1	1.0	1.0	0.7
C 4 2	bed, ft/sec	0	0 1	Λ	0	0 1	0	0	0
C43 C44	Standard deviation Gas velocity at 80-inch	0 1.2	$0.1 \\ 0.5$	0 8.0	0 1.7	$0.1 \\ 1.6$	0 8.0	0 8.0	0 0.5
	bed, ft/sec								
C44	Standard deviation	0	0	0	0	0	0	0	0
C45	Gas velocity at 97-inch bed, ft/sec	1.0	0.4	0.5	1.3	1.3	0.6	0.6	0.4
C45	Standard deviation	0	0	0.2	0	0	0	0	0

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

	(3)				ŭ					
Data	Parameter					Test				
chan- nel		М3	M4	M5	M6	M7	M8	M9	M11	M12
122	Gas cooler 4 coolant temperature, °F	336	338	338	338	308	338	338	338	338
122	Standard deviation	5	0	0	0	13	0	1	0	0
123	Gas cooler 3 coolant temperature, °F	337	338	338	338	315	338	338	338	338
123	Standard deviation	4	0	0	0	12	0	1	0	0
124	Gas cooler 2 coolant temperature, °F	337	338	338	338	311	338	338	338	338
124	Standard deviation	3	0	0	0	13	0	1	0	0
125	Gas cooler 1 coolant temperature, °F	338	338	338	338	318	338	338	338	338
125	Standard deviation	0	0	. 0	0	13	0	1	0	0
126	Gas cooler 4 gas temperature, °F	459	653	655	480	399	516	550	536	670
126	Standard deviation	25	13	7	7	7	14	12	15	37
127	Gas cooler 3 gas temperature, °F	487	688	695	507	418	528	563	566	682
127	Standard deviation	27	12	9	7	9	11	14	19	45
128	Gas cooler 2 gas temperature, °F	505	716	727	529	437	553	588	586	719
128	Standard deviation	28	13	7	8	9	13	14	20	44
129	Gas cooler 1 gas temperature, °F	499	717	729	524	398	576	600	570	691
129	Standard deviation	24	11	14	14	47	56	23	19	70
130	Gas cooler total coolant temperature, °F	83	78	89	85	83	73	87	84	42
130	Standard deviation	1	4	3	2	4	5	2	1	10
132	Gas heat exchanger 4 wall temperature, F	408	618	624	428	352	443	483	479	640
132	Standard deviation	32	19	12	7	13	21	19	18	49
133	Gas heat exchanger 3 wall temperature, F	353	519	529	368	302	394	424	423	532
133	Standard deviation	27	14	10	7	12	19	11	17	38
134	Gas heat exchanger 2 wall temperature, F	421	624	633	435	354	448	485	493	635
134	Standard deviation	33	16	11	7	12	22	20	19	44
135	Gas heat exchanger 1 wall temperature, F	388	592	612	401	262	441	451	427	522
135	Standard deviation	26	16	25	23	74	78	33	25	85
142	Gas coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
142	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
143	Gas cooler coolant outlet temperature, °F	68	70	`69	64	`55	58	`59	`62	`63
143	Standard deviation	1	1	1	4	1	6	2	0	_ 1
Michigan Committee		193	329	339	204	159	231	274	254	364

142	Standard deviation	(b)	(b)	(b)	(b)	(5)	(b)	(5)		** ` ` ` `
143	Gas cooler coolant outlet temperature, °F	68	70	69	64	55	58	59	62	63
143	Standard deviation	1	1	1	4	1	6	2	0	1
144	Exhaust gas tempera- ture, F	193	329	339	204	159	231	274	254	364
144	Standard deviation	13	10	17	20	13	15	19	8	27
145	Exhaust gas exit pres- sure, psid	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
145	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Exhaust gas flow rate, pph	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151	Exhaust gas flow rate, pph	1.07	1.06	1.10	1.02	0.99	1.07	1.07	1.05	1.06
151	Standard deviation	0.07	0.07	0.10	0.05	0.03	0.07	0.07	0.06	0.06
076	Exhaust gas cooler gas temperature, F	84	93	101	87	81	79	92	95	92
076	Standard deviation	1	4	1	6	2	1	4	1	1
152	Exhaust gas exit pres- sure, psia	76.8	67.1	81.9	75.3	75.2	68.0	81.2	78.9	39.2
152	Standard deviation	0.9	4.4	4.0	3.1	2.6	3.3	2.3	1.0	7.3
C29	Coolant heat transfer, Btu/hr	2293	3226	3446	2089	(b)	6422	(b)	(b)	1109
C29	Standard deviation	701	673	323	955	(b)	5784	(b)	(b)	710
C37	Exhaust gas flow rate, lb/hr	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C37	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C38	Gas heat transfer, Btu/hr	8849	45319	46735	9671	6087	15357	22087	16215	52330
C38	Standard deviation	1815	2790	4267	2674	1155	1800	2672	1404	5721
C39	<pre>Gas velocity at grid, ft/sec</pre>	3.2	5.3	5.2	3.1	2.4	3.4	3.4	3.1	5.3
C39	Standard deviation	0.1	0.2	0.1	0	0.1	0	0	0.1	0.1
C40	Gas velocity at 26-inch bed, ft/sec	3.3	5.6	5.5	3.3	2.5	3.6	3.6	3.3	5.7
C40	Standard deviation	0.1	0.2	0.1	0	0.1	0	0.1	0.1	0.1
C41	Gas velocity at 44-inch	1.5	2.6	2.5	1.5	1.1	1.7	1.7	1.5	2.6
0.41	bed, ft/sec	0	0.1	0	0	Λ	0	0	0	0
C41	Standard deviation	1 2	0.1 2.0	0 2.0	0 1.2	0 0.9	0 1.3	0 1.3	1.2	2.1
C42	Gas velocity at 52-inch bed, ft/sec	1.2								
C42	Standard deviation	0	0.1	0	0	0	0	0	0	0
C43	Gas velocity at 68-inch bed, ft/sec	0.9	1.7	1.7	0.9	0.7	1.0	1.0	0.9	1.7
C43	Standard deviation	0	0	0	0	0	0	0	0	0
C44	Gas velocity at 80-inch bed, ft/sec	0.7	1.3	1.3	0.7	0.5	0.8	0.8	0.7	1.3
C44	Standard deviation	0	0	0	0	0	0	0	0	0
C45	Gas velocity at 97-inch	0.6	1.0	1.0	0.6	0.4	0.6	0.6	0.6	1.1
C45	bed, ft/sec Standard deviation	0	0	0	0	0	0	0	0	0

TABLE 4. - Continued.

Data	Parameter	Test							
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
122	Gas cooler 4 coolant temperature, °F	330	338	313	338	338	336	338	338
122	Standard deviation	34	1	68	0	0	8	0	0
123	Gas cooler 3 coolant temperature, °F	330	338	311	338	338	334	338	338
123	Standard deviation	35	1	68	0	0	13	0	0
124	Gas cooler 2 coolant temperature, °F	329	338	312	338	338	334	338	338
124	Standard deviation	35	1	67	0	0	13	0	0
125	Gas cooler 1 coolant temperature, °F	330	338	314	338	338	335	338	338
125	Standard deviation	34	1	61	0	0	10	0	0
126	Gas cooler 4 gas temperature, °F	548	565	504	562	434	545	571	369
126	Standard deviation	73	6	133	5	9	36	3	14
127	Gas cooler 3 gas temperature, °F	565	570	521	584	452	561	589	369
127	Standard deviation	77	6	139	11	11	39	3	18
128	Gas cooler 2 gas temperature, °F	584	596	541	600	460	590	619	384
128	Standard deviation	79	6	141	9	13	38	2	17
129	Gas cooler 1 gas temperature, °F	611	637	560	633	500	617	646	435
129	Standard deviation	82	11	150	7	14	42	4	14
130	Gas cooler total coolant temperature, °F	76	73	86	83	88	79	78	73
130	Standard deviation	3	3	3	4	6	2	1	2
132	Gas heat exchanger 4 wall temperature, F	522	523	479	529	396	575	606	368
132	Standard deviation	70	7	131	10	14	41	3	35
133	Gas heat exchanger 3 wall temperature, F	420	416	386	422	328	458	485	294
133	Standard deviation	56	6	101	15	10	33	4	30
134	Gas heat exchanger 2 wall temperature, F	518	519	476	527	394	564	594	360
134	Standard deviation	67	7	130	11	12	37	4	31
135	Gas heat exchanger 1 wall temperature, F	516	526	475	543	421	574	599	391
135	Standard deviation	73	16	136	12	18	42	3	25
142	Gas coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
142	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
143	Gas cooler coolant outlet temperature, F	64	70	75	73	72	69	69	66
143	Standard deviation	3	2	1	1	3	11	3	

Standard deviation	(b)	(b)	(b)	(b)	(<u>b</u>)	(b)	(b)	(b)
Gas cooler coolant outlet temperature, °F								66
Standard deviation								1
ture, °F								153
								30
sure, psid								(b)
	1 1							(b)
								(b)
Standard deviation	(b)	(b)	(b)	(b)	(b)			(b)
Exhaust gas flow rate,	4.68	7.24	4.02	(b)	(b)	• •		15.30
	1.01	4.10	2.58	(b)	(b)	(b)	4.62	4.47
Exhaust gas cooler gas temperature, °F	90	69	141	91	99			86
Standard deviation	31			4				4
Exhaust gas exit pres- sure, psia	53.8							75.9
Standard deviation								0.5
Coolant heat transfer, Btu/hr								(b)
Standard deviation								(b)
Exhaust gas flow rate, lb/hr	(b)				•			(b)
Standard deviation	(b)	(b)	(b)	(b)				(b)
Gas heat transfer, Btu/hr								7427
Standard deviation								3825
ft/sec								2.3
								0.1
bed, ft/sec								2.4
								0.1
bed, ft/sec								1.1
								0
bed, ft/sec				_				0.9
								0
Gas velocity at 68-inch bed, ft/sec	1.9	1.4		1.4			1.4	0.7
Standard deviation	0	0		0			0	0
Gas velocity at 80-inch bed, ft/sec	1.4	1.1	1.1	1.1	0.7	1.1	1.1	0.5
Standard deviation	0	0	0.1	0	0	0	0	C
Gas velocity at 97-inch	0.4	0.3	0.3	0.4	0.2	0.3	0.5	0.2
Standard deviation	0.2	0	0.1	0.2	0	0.1	0.2	0
	Gas cooler coolant outlet temperature, F Standard deviation Exhaust gas temperature, F Standard deviation Exhaust gas exit pressure, psid Standard deviation Exhaust gas flow rate, pph Standard deviation Exhaust gas flow rate, pph Standard deviation Exhaust gas cooler gas temperature, F Standard deviation Exhaust gas exit pressure, psia Standard deviation Coolant heat transfer, Btu/hr Standard deviation Exhaust gas flow rate, lb/hr Standard deviation Gas heat transfer, Btu/hr Standard deviation Gas velocity at grid, ft/sec Standard deviation Gas velocity at 26-inch bed, ft/sec Standard deviation Gas velocity at 44-inch bed, ft/sec Standard deviation Gas velocity at 52-inch bed, ft/sec Standard deviation Gas velocity at 68-inch bed, ft/sec Standard deviation Gas velocity at 80-inch bed, ft/sec Standard deviation Gas velocity at 80-inch bed, ft/sec Standard deviation Gas velocity at 97-inch bed, ft/sec	Gas cooler coolant outlet temperature, °F Standard deviation 3 Exhaust gas tempera— 251 ture, °F Standard deviation 35 Exhaust gas exit pres— (b) sure, psid Standard deviation (b) Exhaust gas flow rate, pph Standard deviation (b) Exhaust gas flow rate, pph Standard deviation 1.01 Exhaust gas cooler gas temperature, °F Standard deviation 31 Exhaust gas exit pres— 53.8 sure, psia Standard deviation 0.7 Coolant heat transfer, (b) Btu/hr Standard deviation (b) Exhaust gas flow rate, (b) Btu/hr Standard deviation (b) Exhaust gas flow rate, (b) Ib/hr Standard deviation (b) Gas heat transfer, Btu/hr Standard deviation (b) Gas velocity at grid, ft/sec Standard deviation 0.1 Gas velocity at 26—inch bed, ft/sec Standard deviation 0.1 Gas velocity at 44—inch bed, ft/sec Standard deviation 0.1 Gas velocity at 52—inch bed, ft/sec Standard deviation 0.1 Gas velocity at 52—inch bed, ft/sec Standard deviation 0.1 Gas velocity at 68—inch bed, ft/sec Standard deviation 0.1 Gas velocity at 80—inch bed, ft/sec Standard deviation 0 Gas velocity at 80—inch bed, ft/sec Standard deviation 0 Gas velocity at 97—inch 0.4 bed, ft/sec	Gas cooler coolant outlet temperature, F Standard deviation 3 2 Exhaust gas tempera— 251 258 ture, F Standard deviation 35 11 Exhaust gas exit pres— (b) (b) Standard deviation (b) (b) Exhaust gas flow rate, (b) (b) Exhaust gas flow rate, (b) (b) Exhaust gas flow rate, 4.68 7.24 pph Standard deviation 1.01 4.10 Exhaust gas cooler gas 90 69 temperature, F Standard deviation 31 2 Exhaust gas exit pres— 53.8 75.0 sure, psia Standard deviation 0.7 0.5 Exhaust gas exit pres— 53.8 75.0 sure, psia Standard deviation 0.7 0.5 Coolant heat transfer, (b) (b) Exhaust gas flow rate, (b) (c) Exhaust gas flow rate, (c) (c) (d) Exhaust gas flow rate, (d) (d) (d) (d) Exhaust gas flow rate, (d) (d) (d) (d) (d) Exhaust gas flow rate, (d)	Gas cooler coolant outlet temperature, F Standard deviation 3 2 1 Exhaust gas temperature, F Standard deviation 35 11 30 Exhaust gas exit pres— (b) (b) (b) (b) Exhaust gas flow rate, pph Standard deviation (b) (b) (b) (b) Exhaust gas flow rate, pph Standard deviation (b) (b) (c) Exhaust gas flow rate, pph Standard deviation (b) (c) (c) Exhaust gas flow rate, pph Standard deviation (c) (c) (c) Exhaust gas flow rate, pph Standard deviation (c) (c) (c) (c) Exhaust gas cooler gas (c)	Gas cooler coolant outlet temperature, F Standard deviation 3 2 1 1 1	Gas cooler coolant outlet temperature, F Standard deviation	Gas cooler coolant outlet temperature, F Standard deviation 3 2 1 1 3 3 1	Gas cooler coolant outlet temperature, F Standard deviation

TABLE 4. - Continued.

	(3)		Jc	-3				
Data chan-	Parameter				Test			
nel		T6A	T6B	T7A	T7B	T7C	T7D1	T7D2
122	Gas cooler 4 coolant temperature, °F	328	321	336	332	326	330	337
122	Standard deviation	50	60	19	36	48	42	11
123	Gas cooler 3 coolant temperature, °F	328	321	336	332	326	330	337
123	Standard deviation	50	60	19	35	48	42	11
124	Gas cooler 2 coolant temperature, °F	328	321	336	332	326	330	337
124	Standard deviation	50	59	18	35	48	42	10
125	Gas cooler 1 coolant temperature, °F	328	321	336	332	327	331	337
125	Standard deviation	48	59	18	33	46	39	11
126	Gas cooler 4 gas	489	474	556	598	515	527	489
120	temperature, °F	403	4/4	550	330	313	321	403
126	Standard deviation	86	112	60	79	113	92	44
127	Gas cooler 3 gas	511	495	499	538	497	474	442
	temperature, °F							
127	Standard deviation	92	116	43	74	109	99	33
128	Gas cooler 2 gas temperature, °F	522	504	567	633	563	571	542
128	Standard deviation	94	117	57	85	125	89	39
129	Gas cooler 1 gas	519	521	577	636	536	498	508
4.00	temperature, °F		100	~~	0.0	110	100	0.0
129	Standard deviation	90	124	58	82	119	106	88
130	Gas cooler total coolant temperature, °F	61	82	97	82	87	94	95
130	Standard deviation	23	8	8	6	6	9	7
132	Gas heat exchanger 4 wall temperature, F	526	460	586	614	524	611	619
132	Standard deviation	92	110	75	88	123	101	46
133	Gas heat exchanger 3 wall temperature, F	439	379	402	382	363	434	418
133	Standard deviation	78	89	42	53	88	70	34
134	Gas heat exchanger 2 wall temperature, F	526	460	581	587	518	609	621
134	Standard deviation	92	109	74	83	118	100	44
135	Gas heat exchanger 1 wall	479	438	516	539	445	432	502
	temperature, F		, , ,					
135	Standard deviation	81	105	63	72	103	82	104
142	Gas coolant flow rate, gal/min	(b)	(b)	(b)	(b)	(b)	(b)	(b)
142	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
143	Gas cooler coolant outlet temperature, °F	67	70	79	68	73	74	73
143	Standard deviation	2	2	4	3	4	naturalis data kata dana	4

142 143	Standard deviation Gas cooler coolant outlet	(b) 67	(b) 70	(b) 79	(b) 68	(b) 73	(b) 74	(b) 73
1.40	temperature, F	2	2	1	3	4	1	4
143 144	Standard deviation Exhaust gas tempera- ture, F	2 253	2 251	4 295	293	267	4 319	301
144 145	Standard deviation Exhaust gas exit pres- sure, psid	31 32.9	33 51.6	32 39.5	25 41.3	43 43.5	29 42.4	27 42.0
145	Standard deviation	11.3	9.1	9.8	14.6	11.8	8.8	4.3
146	Exhaust gas flow rate, pph	(b)						
146	Standard deviation	(b)						
151	Exhaust gas flow rate,	(b)						
151 076	Standard deviation Exhaust gas cooler gas temperature, °F	(b) 102	(b) 133	(b) 119	(b) 121	(b) 118	(b) 125	(b) 115
076	Standard deviation	48	77	38	52	50	47	46
152	Exhaust gas exit pres-	(b)	66.3	33.3	36.1	30.7	29.2	23.6
152	sure, psia Standard deviation	(b)	7.8	11.1	15.6	16.4	11.5	5.4
C29	Coolant heat transfer, Btu/hr	(b)						
C29	Standard deviation	(b)						
C37	Exhaust gas flow rate, lb/hr	(b)						
C37	Standard deviation	(b)						
C38	Gas heat transfer, Btu/hr	34725	25422	34631	34463	30659	40162	36507
C38	Standard deviation	4760	5280	5941	5270	7792	4900	4857
C39	Gas velocity at grid, ft/sec	4.9	4.2	4.8	4.8	4.8	4.9	4.8
C39	Standard deviation	0.4	1.0	0.2	0.4	0.6	0.5	0.1
C40	Gas velocity at 26-inch bed, ft/sec	5.2	4.5	5.1	5.0	5.1	5.1	5.0
C40	Standard deviation	0.4	0.9	0.2	0.4	0.6	0.4	0.1
C41	Gas velocity at 44-inch bed, ft/sec	2.4	2.0	2.3	2.3	2.3	2.3	2.3
C41	Standard deviation	0.2	0.4	0.1	0.2	0.3	0.2	0
C42	Gas velocity at 52-inch bed, ft/sec	1.9	1.7	1.9	1.9	1.8	1.9	1.9
C42	Standard deviation	0.1	0.3	0.1	0.2	0.2	0.1	0
C43	Gas velocity at 68-inch bed, ft/sec	1.5	1.3	1.5	1.5	1.5	1.5	1.5
C43	Standard deviation	0.1	0.3	0.1	0.1	0.2	0.1	0
C44	Gas velocity at 80-inch bed, ft/sec	1.2	1.0	1.2	1.2	1.2	1.2	1.2
C44	Standard deviation	0.1	0.2	0.1	0.1	0.2	0.1	0
C45	Gas velocity at 97-inch bed, ft/sec	0.9	0.3	0.9	0.9	0.9	0.9	1.0
C45	Standard deviation	0.1	0.3	0.1	0.1	0.1	0.1	0

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

(h) Combustion gas analysis data

Data	Parameter	Test								
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
027	Sample gas temperature,	63	68	70	56	61	87	85	70	66
027	Standard deviation	1	2	5	3	3	2	2	1	1
026	Sample gas pressure, psia	14.3	14.4	14.4	14.4	18.6	14.4	14.5	14.4	14.5
026	Standard deviation	0	0	0.1	0	16.1	0	0.1	0	0.1
063	Nitrogen oxides con- tent, ppm	128	157	175	166	76	93	119	164	174
063	Standard deviation	13	24	14	14	77	34	9	5	7
064	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
064	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
065	Carbon monoxide con- tent, ppm	75	28	23	19	21	30	30	28	31
065	Standard deviation	94	4	4	3	. 22	2	2	10	1
066	Carbon monoxide con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
066	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b <u>)</u>	(b)	(b)
067	Hydrocarbon content, ppm	14	8	4	2	17	24	5	4	3
067	Standard deviation	12	9	2	1	43	22	1	1	0
068	Hydrocarbon content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
068	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
069	Carbon dioxide content, ppm	125600	116590	109210	121720	64638	89775	98305	98221	98462
069	Standard deviation	2231	3722	8966	4543	47379	34461	5606	4907	1426
070	Carbon dioxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
070	Standard deviation	(p)	(b)	(b)	(p)	(p)	(b)	(b)	(b)	(b)
071	Sulfur oxide content, ppm	7.1	9.3	2.1	5.3	5.3	16.4	153.3	107.4	95.5
071	Standard deviation	3.7	10.8	2.1	7.7	4.6	12.1	79.6	42.5	10.1
072	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) 111730	(b) 84057	(b) 98533	(b) 85162
073	Oxygen content, ppm	66914	92995	92076	85552 8817	48977 38598	55152	6760	39130	1434
073 074	Standard deviation	21538 4.9	14385 4 . 9	5419 4.9	4.9	6.5	4.9	4.9	4.9	4.9
074	SO _X permissive signal Standard deviation	4.9	0	0	0	0.3	0	0	0	0
075	Gas analyzer gas tempera- ture, °F	254	254	263	267	185	270	254	256	225
075	Standard deviation	8	36	10	11	70	20	20	25	2
057	Sample gas pressure, psia	29.1	27.2	29.1	29.0	28.2	29.7	27.3	29.7	29.6
057	Standard deviation	0.1	4.8	0.1	0.1	2.1	0.2	5.0	0.2	0.1
089	Sample line differential	(b)	(b)	(b)	(b)		(b)	(b)	months of (P)	(b)

072	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
073	Oxygen content, ppm	66914	92995	92076	85552	48977	111730	84057	98533	85162
073	Standard deviation	21538	14385	5419	8817	38598	55152	6760	39130	1434
074	SO _X permissive signal	4.9	4.9	4.9	4.9	6.5	4.9	4.9	4.9	4.9
074	Standard deviation	0	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, °F	254	254	263	267	185	270	254	256	225
075	Standard deviation	8	36	10	11	70	20	20	25	2
057	Sample gas pressure, psia	29.1	27.2	29.1	29.0	28.2	29.7	27.3	29.7	29.6
057	Standard deviation	0.1	4.8	0.1	0.1	2.1	0.2	5.0	0.2	0.1
089	Sample line differential temperature, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Sample line temperature,	218	218	218	217	216	216	216	216	216
146	Standard deviation	2	2	2	2	2	2	1	. 2	2
150	Sample line differential temperature, °F	146	146	146	146	146	146	144	146	146
150	Standard deviation	, 0	. 0	, 0	, 0	, 0	, 0	, 8	, 0	, 0
157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera- ture, °F	285	286	290	287	222	292	291	290	288
159	Standard deviation	1	5	1	3	46	2	3	2	0
C34	SO_X concentration, ppm	6.1	9.0	2.1	5.3	2.1	16.4	167.2	107.4	95.5
C34	Standard deviation	3.4	11.6	2.1	7.7	0.9	12.1	75.5	42.5	10.1
C46	NO _X concentration, lb/MBtu	0.203	0.840	0.317	0.405	0.133	0.183	0.219	0.288	0.311
C46	Standard deviation	0.043	1.565	0.057	0.296	0.134	0.074	0.029	0.025	0.062
C47	SO _X concentration, lb/MBtu	0.012	0.041	0.005	0.014	0.006	0.048	0.433	0.263	0.239
C47	Standard deviation	0.006	0.041	0.005	0.017	0.006	0.042	0.213	0.109	0.058
C49	Exhaust sulfur, percent	0.42	1.44	0.18	0.50	0.22	1.67	15.08	9.16	8.30
	of input									0.29

7-11/A 21)

TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

	` '			9	J				
Data chan-	Parameter				Te	est			
ne]		A8B	A7B	A6B	A5B	АЗВ	A16B	A12B	A17B
027	Sample gas temperature,	76	82	74	69	66	71	86	89
027 026	Standard deviation Sample gas pressure, psia	4 14.4	2 14.4	2 14.4	1 14.4	1 14.4	6 14.4	3 14.4	1 14.5
026 063	Standard deviation Nitrogen oxides con- tent, ppm	0.1 176	0.1 145	0 172	0.1 129	0.1 5	0 116	0 163	0.1 174
063 064	Standard deviation Nitrogen oxides con- tent, ppm	12 (b)	10 (b)	7 (b)	88 (b)	1 (b)	64 (b)	14 (b)	23 (b)
064 065	Standard deviation Carbon monoxide con- tent, ppm	(b) 33	(b) 26	(b) 49	(b) 100	(b) 44	(b) 45	(b) 87	(b) 21
065 066	Standard deviation Carbon monoxide con- tent, ppm	2 (b)	6 (b)	5 (b)	9 (b)	2 (b)	3 (b)	9 (b)	3 (b)
066 067	Standard deviation Hydrocarbon content,	(b) 2.6	(b) 2.2	(b) 3.3	(b) 6.9	(b) 3.3	(b) 2.9	(b) 10.7	(b) 7.7
067 068	<pre>' ppm Standard deviation Hydrocarbon content,</pre>	0.2 (b)	0.8 (b)	0.2 (b)	0.8 (b)	1.9 (b)	0.2 (b)	5.7 (b)	1.7 (b)
068 069	ppm Standard deviation Carbon dioxide content, ppm	(b) 98390	(b) 103110	(b) 90221	(b) 91702	(b) 103350	(b) 107080	(b) 130040	(b) 104320
069 070	Standard deviation Carbon dioxide content, ppm	2466 (b)	5990 (b)	2328 (b)	2729 (b)	7502 (b)	6261 (b)	8316 (b)	2959 (b)
070 071 071 072 072 073 073 074 074	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation	(b) 129 12 (b) (b) 86049 3083 4.9	(b) 149 70 (b) (b) 82149 5662 4.9	(b) 271 79 (b) (b) 88774 2840 4.9	(b) 464 35 (b) (b) 90549 4952 5.0	(b) 384 38 (b) (b) 84322 7664 5.0	(b) 312 36 (b) (b) 86612 5701 5.0	(b) 373 115 (b) (b) 48814 8918 4.9	(b) 72 34 (b) (b) 81124 1847 4.9
075	Gas analyzer gas tempera- ture, F	225	233	233	219	211	270	279	270

	073	Oxygen content, ppm	86049	82149	88774	90549	84322	86612	48814	81124
	073	Standard deviation	3083	5662	2840	4952	7664	5701	8918	1847
•	074	SO _x permissive signal	4.9	4.9	4.9	5.0	5.0	5.0	4.9	4.9
	074	Standard deviation	0	0	0	0	0	0	0	0
	075	Gas analyzer gas tempera- ture, F	225	233	233	219	211	270	279	270
	075	Standard deviation	3	17	13	2	5	21	8	18
	057	Sample gas pressure, psia	29.6	28.2	28.9	29.3	29.5	28.7	24.8	29.3
	057	Standard deviation	0	4.1	0	0.2	0.2	0.4	2.4	0.1
	089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	089	Standard deviation	(b)	(b) (b)						
	090	Sample line temperature, F	(b)		. ,					
	090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	091	Sample line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	091	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Sample line temperature, °F	216	216	215	216	216	217	216	217
	146	Standard deviation	2	2	1	2	1	2	1	3
	150	Sample line differential temperature, F	146	146	146	146	146	146	146	147
	150	Standard deviation	0	0	. 0	0	0	0	0	0
7	157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Ę	157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(þ)
FOLDOUT FRAME	159	Sample line wall tempera- ture, °F	290	289	285	287	286	288	291	291
<i>H</i>	159	Standard deviation	1	4	5	1	1	3	2	1
Ħ	C34	SO_X concentration, ppm	129	161	271	464	384	312	291	72
₽	C34	Standard deviation	12	58	79	35	38	36	125	34
Ħ	C46	NO _X concentration, lb/MBtu	0.300	0.254	0.298	0.167	0.008	0.190	0.209	0.305
بر	C46	Standard deviation	0.043	0.049	0.062	0.156	0.002	0.108	0.045	0.045
•	C47	SO _X concentration, Tb/MBtu	0.308	0.384	0.674	0.962	0.938	0.704	0.570	0.194
	C47	Standard deviation	0.053	0.131	0.286	0.424	0.276	0.097	0.267	0.112
	C49	Exhaust sulfur, percent of input	10.70	13.35	23.43	33.44	32.63	24.47	19.83	6.73
	C49	Standard deviation	0.26	0.65	1.41	2.09	1.36	0.48	1.32	0.55

TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

	(ii) continued	• Combu	stion ga	s anaiys	13 data			
Data	Parameter				Test			
chan- nel		C1	C3	C8	C11	C12	C16	C17
027	Sample gas temperature,	59	58	53	48	62	69	71
027 026	Standard deviation Sample gas pressure, psia	1 14.4	0 14.4	2 14.5	2 14.5	3 14.4	1 14.4	0 14.4
026 063	Standard deviation Nitrogen oxides con- tent, ppm	0 187	0 224	0 212	0 174	0 185	0 212	0 149
063 064	Standard deviation Nitrogen oxides con- tent, ppm	40 (b)	11 (b)	(b)	66 (b)	64 (b)	8 (b)	85 (b)
064 065	Standard deviation Carbon monoxide con- tent, ppm	(b) 74	(b) 43	(b) 39	(b) 32	(b) 71	(b) 59	(b) 26
065 066	Standard deviation Carbon monoxide con- tent, ppm	18 (b)	3 (b)	5 (b)	11 (b)	18 (b)	5 (b)	8 (b)
066 067	Standard deviation Hydrocarbon content, ppm	(b) 10.2	(b) 2.5	(b) 2.2	(b) 3.3	(b) 4.7	(b) 2.9	(b) 3.5
067 068	Standard deviation Hydrocarbon content, ppm	1.2 (b)	0.3 (b)	0.5 (b)	0.8 (b)	2.1 (b)	0.3 (b)	0.4 (b)
068 069	Standard deviation Carbon dioxide content, ppm	(b) 87581	(b) 99602	(b) 90137	(b) 85746	(b) 115170	(b) 97547	(b) 73343
069 070	Standard deviation Carbon dioxide content, ppm	5014 (b)	4893 (b)	2402 (b)	30892 (b)	28704 (b)	1919 (b)	42331 (b)
070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	(b) 423 75 (b)	(b) 404 27 (b)	(b) 419 19 (b)	(b) 290 65 (b)	(b) 252 102 (b)	(b) 313 16 (b)	(b) 318 185 (b)
072 072 073 073	Standard deviation Oxygen content, ppm Standard deviation	(b) 92511 4430	(b) 87881 6450	(b) 97541 3231	(b) 82499 18989	(b) 55321 6739	(b) 90364 3584	(b) 120280 51804
074 074 075	SO _X permissive signal Standard deviation Gas analyzer gas tempera-	5.0 0 222	5.0 0 232	5.0 0 229	5.0 0 237	5.6 1.7 256	5.0 0 262	5.0 0 281
075	ture, F Standard deviation	10	2	. 2	15	29	4	24

FOLDOUT FRAME

	072	Owner of the Property of the P	(D)	(b)	(p)	(b)	(b)	(b)	(b)
	073	Oxygen content, ppm	92511	87881	97541	82499	55321	90364	120280
	073 074	Standard deviation	4430	6450		18989	6739	3584	51804
	074	SO _X permissive signal Standard deviation	5.0	5.0	5.0	5.0	5.6	5.0	5.0
	075		0	0	0	0	1.7	0	0
	0,5	Gas analyzer gas tempera- ture, F	222	232	229	237	256	262	281
	075	Standard deviation	10		_				
	057	Sample gas pressure,	29.1	20.2	. 2	15	29	4	24
		psia	29.1	29.2	29.2	29.3	28.8	29.0	29.2
	057	Standard deviation	0	0.1	0	0.1	0 0	0 4	0.0
	089	Sample line differential	(b)	(b)	(b)	(b)	0.2 (b)	0.4 (b)	0.2
	000	temperature, °F	. ,	(~)	(5)	(1)	(1)	(0)	(b)
	089 090	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	090	Sample line temperature,	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(δ)	\b\
	090	Standard deviation	(,)	/. \	4		-	• •	(-)
	091	Sample line temperature,	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)
		F	(0)	(b)	(b)	(b)	(b)	(b)	(b)
	091	Standard deviation	(b)	(b)	(b)	/ t. \	/ 1 \	4	
	146	Sample line temperature.	215	217	216	(b) 216	(b) 218	(b)	(b)
		°F		41/	210	210	218	218	218
	146	Standard deviation	2	2	2	1	1	2	. 3
	150	Sample line differential	145	145	145	145	146	146	146
	150	temperature, °F					1.40	140	140
leri	157	Standard deviation	0	0	0	0	0	0	0
ĝ	137	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
FOLDOUT FRAME	157	Standard deviation	(b)	/ L\	/ L \	/1. \	4		
9	159	Sample line wall tempera-	286	(b) 284	(b) 284	(b)	(b)	(b)	(b)
H		ture, °F	200	204	404	282	287	289	292
Ħ	159	Standard deviation	0	1	0	2	3	0	2
A	C34	SO_X concentration, ppm	75	27	19	15	108	16	2 185
À	C34	Standard deviation	4	5	4	4	4	5	5
	C46	NO _X concentration, lb/MBtu	0.428	0.438	0.413	0.327	0.266	0.433	0.349
r	C46	Standard deviation	0.179	0.124	0.047	0.140	0.094	0 025	0.010
	C47	SO_X concentration,	1.352	1.101	1.149	0.693	0.509	0.035 0.892	0.213
	0.47	lb/MBtu			X • X ¬ J	0.033	0.509	0.092	1.046
	C47	Standard deviation	0.531	0.294	0.193	0.130	0.262	0.090	0.672
	C49	Exhaust sulfur, percent	46.99	38.29	39.95	24.13	17.69	31.01	36.39
	C49	of input	0	_					30.03
	しサブ	Standard deviation	2.61	1.44	0.95	0.64	1.29	0.44	3.30
	h								



TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

			J	·				
Data	Parameter				Test			
chan- nel		D6	D7	D2	D1	D10	D3	D4
027	Sample gas temperature,	72	71	77	72	63	68	80
027	Standard deviation	4	0	2	3	2	7	1
026	Sample gas pressure, psia	14.5	14.6	14.6	14.6	14.6	14.6	14.5
026	Standard deviation	0	0	0	0	0	0	0.1
063	Nitrogen oxides con- tent, ppm	94	206	205	240	236	214	238
063	Standard deviation	80	40	. 8	5	6	14	16
064	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
064	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
065	Carbon monoxide con- tent, ppm	20	21	11	58	62	14	15
065	Standard deviation	10	6	4	9	2	5	3
066	Carbon monoxide con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
066	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
067	Hydrocarbon content, ppm	12.0	1.3	2.4	4.8	3.5	0.6	3.4
067	Standard deviation	23.7	0.4	0.2	0.6	0.5	0.3	2.1
068	Hydrocarbon content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
068	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
069	Carbon dioxide content,	68606	89106	93394	70675	79712	105510	93313
069	Standard deviation	13163	4002	3785	1506	2018	16529	13072
070	Carbon dioxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
070	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
071	Sulfur oxide content, ppm	114	288	329	369	360	171	242
071	Standard deviation	102	45	19	17	9	48	48
072	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Standard deviation	(b)	(b)	(b)	(b)	(b) 109310	(b) 80049	(b) 92872
073 073	Oxygen content, ppm Standard deviation	86424 61907	90113 17814	77524 4075	122980 2767	4076	8889	17073
073	SO _x permissive signal	5.0	5.0	5.0	5.0	5.0	5.0	5.0
074	Standard deviation	0	0	0.0	0.0	0	0	0
075	Gas analyzer gas tempera-	200	261	297	284	286	309	309
	ture, F					المدولة والمعارض	مروري مستخطية (الأمامة	l reconsiderate (the lives

was street Street	072	Standard deviation	(b)						
	073	Oxygen content, ppm	86424	90113	77524	122980	109310	80049	92872
	073	Standard deviation	61907	17814	4075	2767	4076	8889	17073
	074 074	SO _X permissive signal Standard deviation	5.0 0						
	075	Gas analyzer gas tempera- ture, F	200	261	297	284	286	309	309
	075	Standard deviation	47	31	2	16	4	17	18
	057	Sample gas pressure, psia	20.4	27.7	28.9	28.0	28.8	27.1	28.0
	057	Standard deviation	6.5	3.7	0	2.2	0.1	3.8	2.2
	089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(d)	(b)	(b)
	089 090	Standard deviation Sample line temperature,	(b) (b)						
		°F	. ,						
	090 091	Standard deviation Sample line temperature,	(b) (b)						
	051	F	(0)	(6)	(5)	(5)	(5)	(6)	(6)
	091	Standard deviation	(b)						
	146	Sample line temperature, °F	21.4	214	(b)	215	215	214	214
	146	Standard deviation	0	0	(b)	1	1	1	1
	150	Sample line differential temperature, °F	145	146	138	146	146	146	146
	150	Standard deviation	0	0	. 3	0	. 0	0	0
lizel	157	Sample port gas tempera- ture, °F	(b)						
Õ	157	Standard deviation	(b)						
FOLDOUT FRAME	159	Sample line wall tempera- ture, °F	260	261	232	265	265	271	274
TU	159	Standard deviation	4	2	50	2	1	2	1
三	C34	SO_{x} concentration, ppm	124	286	329	369	360	172	242
ß	C34	Stândard deviation	91	45	19	17	9	50	48
ME	C46	NO _x concentration, lb/MBtu	0.185	0.466	0.732	0.670	0.591	0.414	0.532
N	C46	Standard deviation	0.137	0.085	0.362	0.076	0.074	0.139	0.124
~	C47	SO _x concentration, Îb/MBtu	0.359	0.903	1.625	1.433	1.256	0.458	0.724
	C47	Standard deviation	0.258	0.116	0.759	0.165	0.179	0.167	0.105
	C49	Exhaust sulfur, percent of input	12.50	31.39	56.51	49.82	43.67	15.41	25.16
	C49	Standard deviation	1.27	0.57	3.73	0.81	8.80	0.82	0.52

bData or results were not obtained.

(h) Continued. Combustion gas analysis data

TABLE 4. - Continued.

	(II) Cont	inueu. C	Ollipastio	ii yas ai	iaiysis u	αια			
Data	Parameter				T	est			
chan- nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	T81H
027	Sample gas temperature,	72	70	71	67	62	65	74	82
027	Standard deviation	1	2	7	4	3	7	8	7
026	Sample gas pressure, psia	14.4	14.4	14.4	14.3	14.5	14.5	14.5	14.5
026	Standard deviation	0	0	0.1	0.1	0.1	0.1	0.1	0.1
063	Nitrogen oxides con- tent, ppm	170	188	217	102	129	134	(b)	(p)
063	Standard deviation	6	11	8	20	46	46	(b)	(b)
064	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
064	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
065	Carbon monoxide con- tent, ppm	52	46	38	21	16	22	9	35
065	Standard deviation	6	8	8	11	5	17	(5)	(-)
066	Carbon monoxide con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
066	Standard deviation	(p)	(b)	(b)	(b)	(b)	(b)	(b)	(b) 10.0
067	Hydrocarbon content,	2.6	1.8	2.0	3.3	1.4	2.5	8.3	
067	Standard deviation	1.0	0.8	1.2	6.4	0.2	2.2	1.7	(h)
068	Hydrocarbon content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
068	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
069	Carbon dioxide content, ppm	100860	94393	91576	102760	91383	91253	4937	(b)
069	Standard deviation	5240	5272	3685	6805	32385	29014	4695	(b)
070	Carbon dioxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
070	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
071 071	Sulfur oxide content, ppm Standard deviation	170 32	330 41	495 75	418 152	505 211	271 166	15 30	1.5 3.1
071	Sulfur oxide content, ppm	32 (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Oxygen content, ppm	81058	90913	89223	77813	77494	75254	6850	212810
073	Standard deviation	6630	5157	3065	7166	27065	26233	6700	352
074	SO _x permissive signal	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
074	Stândard deviation	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	246	226	253	211	242	222	151	152
075	Standard deviation	16	9	7	35	13	49	4	7
057	Sample gas pressure, psia	29.4	29.2	29.2	26.0	28.0	23.3	15.1	15.4
057	Standard deviation	0.1	0.1	0.1	5.6	3.0	6.7	3.6	3.4

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ppm	, , , , , , , , , , , , , , , , , , , ,							
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)		(b)
Sulfur oxide content, ppm	170	330	495					1.5
								3.1
								(b)
								(b)
								212810
								352
								5.0 0
								152
ture, °F							_	
								15 /
psia								15.4
								3.4
temperature, °F								(b)
	(b)	(þ)	(b)	(b)	(þ)	(þ)	(þ)	(b)
Sample line temperature, °F	(b)	(b)	(D)	(a)	(D)			
Standard deviation	(b)	(b)	(b)	(b)	(b)			(b)
Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
F			4. 3			4. 1		/1. \
								(b)
Sample line temperature, °F	215	216	215	214	215	216	245	214
Standard deviation	1	Ĩ.	1	1	0	2	14	1
Sample line differential	146	146	146	146	146	146	123	145
temperature, F	0	0	0	0	0	0	11	1
								1 (b)
ture, °F	(D)	(0)	(0)	(b)	(0)	(D)	(0)	(b)
Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Sample line wall tempera- ture, °F	283	281	286	277	283	280	269	258
Standard deviation	1	2	1	5	3	4	5	5
SO_x concentration, ppm	170	330	495	455	500	396	(b)	(b)
Stândard deviation	32	41	75	151	64	75		(b)
NO _x concentration, lb/MBtu	0.337	0.372	0.447	0.190	0.239	0.240	(b)	(b)
Standard deviation	0.067	0.087	0.153	0.050	0.104	0.086	(b)	(b)
SO _x concentration, lh/MBtu	0.454	0.913	1.416	1.177	1.275	0.995	(b)	(b)
Standard deviation	0.057	0.266	0.542	0.398	0.277	0.226	(b)	(b)
Exhaust sulfur, percent	15.80	31.75	49.25	40.92	44.33	34.59	(b)	(b)
Standard deviation	0.28	1.31	2.67	1.96	1.37	1.11	(b)	(b)
	Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas temperature, F Standard deviation Sample gas pressure, psia Standard deviation Sample line differential temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sox concentration, ppm Standard deviation NOx concentration, lb/MBtu Standard deviation Exhaust sulfur, percent of input	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Standard deviation Oxygen content, ppm Standard deviation Sox permissive signal Standard deviation Gas analyzer gas temperature, F Standard deviation Sample gas pressure, 29.4 psia Standard deviation Sample line differential (b) temperature, F Standard deviation Sample line temperature, (b) Sample line temperature, (b) F Standard deviation Sample line differential temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample line wall temperature, (b) Sample line wall temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sox concentration, ppm Standard deviation Sox concentration, ppm Standard deviation Sox concentration, 0.337 Ib/MBtu Standard deviation Sox concentration, 0.454 Ib/MBtu Standard deviation Sox concentration, 0.057 Exhaust sulfur, percent of input	Standard deviation Sulfur oxide content, ppm 170 330 Standard deviation 32 41 Sulfur oxide content, ppm (b) (b) Standard deviation (b) (b) Standard deviation (b) (b) Oxygen content, ppm 81058 90913 Standard deviation 6630 5157 SOx permissive signal 5.0 5.0 Standard deviation 0 0 0 Gas analyzer gas tempera— 246 226 ture, F Standard deviation 16 9 Sample gas pressure, 29.4 29.2 psia 5tandard deviation 0.1 0.1 Sample line differential (b) (b) temperature, F Standard deviation (b) (b) Sample line temperature, (b) (b) F Standard deviation (b) (b) Sample line temperature, (b) (c) F Standard deviation (b) (b) Sample line temperature, 215 216 F Standard deviation 1 1 Sample line differential 146 temperature, F Standard deviation 0 0 Sample line differential 146 temperature, F Standard deviation 0 0 Sample line wall tempera— 283 281 ture, F Standard deviation 1 2 SOx concentration, ppm 170 330 Standard deviation 0 0.337 0.372 Tb/MBtu Standard deviation 0.067 0.087 SOx concentration, 0.454 0.913 Tb/MBtu Standard deviation 0.057 0.266 Exhaust sulfur, percent 15.80 31.75 of input	Standard deviation (b) (b) (b) Sulfur oxide content, ppm 170 330 495 Standard deviation 32 41 75 Sulfur oxide content, ppm (b) (b) (b) (b) Sulfur oxide content, ppm 81058 90913 89223 Standard deviation 6630 5157 3065 SO _X permissive signal 5.0 5.0 5.0 Standard deviation 0 0 0 Gas analyzer gas temperature, "F 246 226 253 Standard deviation 16 9 7 Sample gas pressure, 29.4 29.2 29.2 29.2 psia 29.4 29.2 29.2 29.2 psia	Standard deviation	Standard deviation	Standard deviation (b) (b) (b) (b) (b) (b) (c) Sulfur oxide content, ppm 170 330 495 418 505 271 Standard deviation 32 41 75 152 211 166 Sulfur oxide content, ppm (b)	Standard deviation (b) (b) (b) (b) (b) (b) (b) (b) (b) Sulfur oxide content, ppm 170 330 495 418 505 271 155 Standard deviation 32 41 75 152 211 166 30 Sulfur oxide content, ppm (b)



TABLE 4. - Continued.

			9	3		-		
Dat cha					Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB26
027	Sample gas temperature,	80	78	81	74	79	84	88
027 026		5 14.5	3 14.5	7 14.4	5 15.0	3 14.4	4 14.2	3 14.1
026 063	Standard deviation	0 239	0.1 305	0.1 266	1.6 207	0 247	0.1 190	0 237
063 064	Standard deviation	21 (b)	209 (b)	10 (b)	31 (b)	11 (b)	11 (b)	31 (b)
064 065	Standard deviation	(b) 4	(b) 10	(b) 8	(b) 12	(b) 7	(b) 12	(b) 8
065 066	Standard deviation Carbon monoxide con- tent, ppm	5 (b)	4 (b)	4 (b)	2 (b)	1 (b)	1 (b)	2 (b)
066 067	Standard deviation Hydrocarbon content, ppm	(b) 0.8	(b) 1.2	(b) 1.5	(b) 1.8	(b) 1.4	(b) 0.4	(b) 0.9
067 068	Standard deviation Hydrocarbon content, ppm	0.5 (b)	0.5 (b)	0.4 (b)	0.1 (b)	0.4 (b)	0.4 (b)	0.4 (b)
068 069	Standard deviation Carbon dioxide content, ppm	(b) 110590	(b) 72239	(b) 71512	(b) 81760	(b) 70504	(b) 79852	(b) 75866
069 070	Standard deviation Carbon dioxide content, ppm	4381 (b)	10484 (b)	1716 (b)	5983 (b)	4891 (b)	3261 (b)	5147 (b)
070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	(b) 330 103 (b)	(b) 192 69 (b)	(b) 206 344	(b) 252 25	(b) 261 176	(b) 393 97	(b) 355 91
072 073 073	Standard deviation Oxygen content, ppm Standard deviation	(b) 66414 9012	(b) 111520 10780	(b) (b) 116840 1810	(b) (b) 111680 2556	(b) (b) 119970 7506	(b) (b) 107660 3827	(b) (b) 110100 4867
074 074 075	SO _x permissive signal Standard deviation Gas analyzer gas tempera— ture, F	5.0 0 248	5.0 0 240	5.0 0 236	5.0 0 232	5.0 0 243	5.0 0 243	5.0 0 253

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	ppm							
070 071 071	Standard deviation Sulfur oxide content, ppm Standard deviation	(b) 330 103	(b) 192 69	(b) 206 344	(b) 252 25	(b) 261 176	(b) 393 97	(b) 355 91
072	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
073	Oxygen content, ppm	66414	111520	116840	111680	119970	107660	110100
073	Standard deviation	9012	10780	1810	2556	7506	3827	4867
074	SO _X permissive signal	5.0	5.0	5.0	5.0	5.0	5.0	5.0
074	Standard deviation	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	248	240	236	232	243	243	253
075	Standard deviation	36	15	28	7	14	8	12
057	Sample gas pressure, psia	26.5	29.2	29.2	29.3	29.2	28.9	29.0
057	Standard deviation	5.3	0.6	0.9	0.5	0.5	0.5	0.1
089	Sample line differential temperature, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089 090	Standard deviation Sample line temperature,	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
090	°F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
091	F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Sample line temperature,	215	215	216	211	211	215	215
146	Standard deviation	4	2	1	4	1	1	0
150	Sample line differential temperature, °F	146	146	144	142	142	146	146
150	Standard deviation	0	0	1	4	1	0	0
157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera- ture, °F	273	273	287	278	278	284	284
159	Standard deviation	4 265	5	1 224	3	3 261	1 393	1 355
C34 C34	SO _X concentration, ppm Standard deviation	365 56	192 69	353	252 25	176	97	91
C46	NO_{x} concentration,	0.479	0.820	0.691	0.479	0.614	0.471	0.550
	îb/MBtu							
C46	Standard deviation	0.225	0.607	0.112	0.101	0.101	0.043	0.152
C47	SO _X concentration, lb/MBtu	1.022	0.760	0.820	0.823	0.903	1.353	1.149
C47	Standard deviation	0.317	0.580	1.292	0.223	0.627	0.328	0.381
C49	Exhaust sulfur, percent of input	35.53	26.42	28.51	28.63	31.39	47.04	39.96
C49	Standard deviation	1.56	2.85	6.35	1.09	3.08	1.61	1.88

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TABLE 4. - Continued.

Data	Parameter				Τe	est			
chan- nel		E1	E2	E3	E4	E5	E6	E9	E8
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 122	(b) 141	(b) 11	(b) 224	(b) 105	(b) 151	(b) 89	(b) 150
064 065	Standard deviation Carbon monoxide con- tent, ppm	15 (b)	10 (b)	5 (b)	44 (b)	49 (b)	22 (b)	6 (b)	15 (b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 20	(b) 20	(b) 508	(b) 55	(b) 19	(b) 44	(b) 21	(b) 36
066 067	Standard deviation Hydrocarbon content, ppm	2 (b)	(b)	231 (b)	63 (b)	9 (b)	9 (b)	1 (b)	6 (b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) (b)	(b) 98.8	(b) 37.0	(b) 18.6	(b) 24.3	(b) 35.0	(b) 52.5	(b) 57.5
068 069	Standard deviation Carbon dioxide content, ppm	(b)	138.7 (b)	12.7 (b)	16.0 (b)	10.5 (b)	6.3 (b)	6.2 (b)	2.5 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 141940	(b) 103180	(b) 171720	(b) 139750	(b) 120670	(b) 127890	(b) 154140	(b) 122430
070 071 071 072 072 073 073 074 074	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation	15158 (b) (b) (b) (b) 45006 13856 5.5 1.6	1986 (b) (b) (b) (b) 92624 1671 4.9	5374 (b) (b) 647 168 7996 3231 7.4 2.5	37424 (b) (b) 279 875 32339 10842 6.9 2.4	49633 (b) (b) 13 22 47383 51609 5.9 2.0	2735 (b) (b) 54 42 56169 3987 4.9	6799 (b) (b) 101 27 44768 7273 7.0 2.5	37557 (b) (b) 186 76 55220 17339 4.9
075	Gas analyzer gas tempera- ture, F	161	203	177	203	216	135	205	173

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071	Sulfur oxide content, ppm	(b)							
071 072	Standard deviation Sulfur oxide content, ppm	(b) (b)	(b) (b)	(b) 647	(b) 279	(b) 13	(b) 54	(b) 101	(b) 186
072	Standard deviation	(b)	(b)	168	279 875	22	42	27	76
073	Oxygen content, ppm	45006	92624	7996	32339	47383	56169	44768	55220
073	Standard deviation	13856	1671	3231	10842	51609	3987	7273	17339
074	SO _x permissive signal	5.5	4.9	7.4	6.9	5.9	4.9	7.0	4.9
074	Standard deviation	1.6	0	2.5	2.4	2.0	0	2.5	0
075	Gas analyzer gas tempera- ture, F	161	203	177	203	216	135	205	173
075	Standard deviation	14	14	10	27	26	16	5	28
057	Sample gas pressure, psia	30.1	28.0	29.4	26.0	29.5	23.0	30.4	27.4
057	Standard deviation	0.5	4.4	0.3	5.6	0.2	5.8	0.1	5.6
089	Sample line differential temperature, °F	145	145	145	144	144	144	144	145
089	Standard deviation	0.2	0.4 213	0.3 214	0.2 213	0.3 214	0.4 214	0.1 214	0.3 215
090	Sample line temperature,	214	213	214	213	214	214	714	213
090	Standard deviation	0.2	0.3	0.6	0.3	0.5	1.0	0.4	0.6
091	Sample line temperature,	61	71	72	67	59	65	55	68
091	Standard deviation	2	1	1	3	1	3	1	3
146	Sample line temperature,	(b)							
	°F								
146	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
150	Sample line differential	(b)							
150	temperature, F Standard deviation	(b)							
157	Sample port gas tempera-	(b)							
157	ture, F	(2)	(0)	(~)	(~)	(-,	(-,	(- /	
157	Standard deviation	(b)							
159	Sample line wall tempera-	(b)							
159	ture, [*] F Standard deviation	(b)							
C34	SO_{x} concentration, ppm	(b)	(b)	733	5	8	52	111	205
C34	Standard deviation	(b)	(Ď)	127	1	13	38	31	47
C46	NO _x concentration, 1b/MBtu	0.301	0.259	0.045	0.275	0.174	0.702	0.243	0.308
C46	Standard deviation	0.094	0.033	0.055	0.133	0.105	0.102	0.026	0.092
C47	SO _X concentration, lb/MBtu	(b)	(b)	2.750	0.767	0.033	0.284	0.426	0.557
C47	Standard deviation	(b)	(b)	0.907	1.841	0.073	0.211	0.117	0.221
C49	Exhaust sulfur, percent	(b)	(b)	93.60	26.09	1.13	9.67	14.49	18.97
	of input								
C49	Standard deviation	(b)	(b)	30.89	62.68	2.49	7.17	3.98	7.51

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TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

Data	Parameter				Test			
chan- nel		E19	E13A	E13B	E14	E11	E12	E15
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure,	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
026	psia Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
063	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 135	(b) 191	(b) 203	(b) 131	(b) 156	(b) 162	(b) 205
064 065	Standard deviation Carbon monoxide con-	8 (d)	15 (b)	9 (b)	6 (b)	6 (b)	22 (b)	28 (b)
065	tent, ppm Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
066	Carbon monoxide con- tent, ppm	18	19	19	13	25	38	34
066 067	Standard deviation Hydrocarbon content,	6 (b)	1 (b)	1 (b)	2 (b)	3 (b)	4 (b)	6 (b)
067 068	ppm Standard deviation Hydrocarbon content,	(b) 27.4	(b) 9.9	(b) 9.1	(b) 7.3	(b) 5.7	(b) 4.3	(b) 4.6
068 069	ppm Standard deviation Carbon dioxide content,	22.1 (b)	0.7 (b)	1.8 (b)	0.8 (b)	0.6 (b)	0.9 (b)	0.4 (b)
069	ppm Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
070	Carbon dioxide content, ppm	128880	130940	120950	144530	115550	131820	118830
070 071	Standard deviation Sulfur oxide content, ppm	4240 (b)	1147 (b)	5260 (b)	4043 (b)	8771 (b)	10147 (b)	9959 (b)
071 072	Standard deviation Sulfur oxide content, ppm	(b) 206	(b) 517	(b) 414	(b) 505	(b) 271	(b) 356 210	(b) 101
072 073 073	Standard deviation Oxygen content, ppm Standard deviation	93 55629 18551	8 61387 1981	10 71849 7233	92 48637 4349	94 82343 9239	63905 8863	82 69187 9207
074 074	SO _X permissive signal Standard deviation	4.9	4.9	4.9	6.8 2.4	4.9	4.9	4.9
075	Gas analyzer gas tempera- ture, °F	182	185	190	166	225	181	226

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072	Standard deviation	93	8	10	92	94	210	82
073	Oxygen content, ppm	55629	61387	71849	48637	82343	63905	69187
073	Standard deviation	18551	1981	7233	4349	9239	8863	9207
074 074	SO _X permissive signal Standard deviation	4.9 0	4.9 0	4.9 0	6.8 2.4	4.9 0	4.9 0	4.9 0
975	Gas analyzer gas tempera-	182	185	190	166	225	181	226
075	ture, [*] F Standard deviation	8	8	3	4	1	24	6
057	Sample gas pressure, psia	29.5	29.4	27.9	29.4	29.3	29.5	29.0
057	Standard deviation	0.1	0.1	2.9	0	0.1	0.2	0.5
089	Sample line differential temperature, °F	145	145	144	144	144	144	144
089	Standard deviation	0	0	0	0	0	0	1
090	Sample line temperature, °F	214	213	213	214	214	214	214
090	Standard deviation	1	0	0	1	0	1	1
091	Sample line temperature, °F	288	288	289	289	287	287	287
091	Standard deviation	1	0	1	0	0	0	0
146	Sample line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(p)
159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C34 C34	SO _X concentration, ppm Standard deviation	227 72	517 8	414 10	447 46	271 94	288 85	101 82
C46	NO _X concentration,	0.206	0.281	0.352	0.195	0.329	0.230	0.376
C46	Standard deviation	0.040	0.029	0.040	0.057	0.098	0.083	0.086
C47	SO _X concentration, 1b/MBtu	0.478	1.059	0.999	0.932	0.833	0.591	0.230
C47	Standard deviation	0.165	0.037	0.082	0.277	0.445	0.246	0.168
C49	Exhaust sulfur, percent of input	16.28	36.05	34.03	31.73	28.37	20.13	7.84
C49	Standard deviation	5.63	1.24	2.80	9.43	15.16	8.37	5.72

bData or results were not obtained.

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TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		F1	F2	F3	F4	F6	F5	F7	F8	F9
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 221	(b) 211	(b) 22	(b) 192	(b) 192	(b) 136	(b) 270	(b) 338	(b) 263
064 065	Standard deviation Carbon monoxide con- tent, ppm	28 (b)	4 (b)	2 (b)	30 (b)	14 (b)	11 (b)	17 (b)	26 (b)	18 (b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 72	(b) 26	(b) 390	(b) 17	(b) 14	(b) 13	(b) 36	(b) 15	(b) 21
066 067	Standard deviation Hydrocarbon content, ppm	106 (b)	1 (b)	137 (b)	5 (b)	1 (b)	1 (b)	39 (b)	2 (b)	4 (b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) 2.7	(b) 3.6	(b) 15.7	(b) 2.2	(b) 1.5	(b) 0.9	(b) 1.9	(5) 1.8	(b) 1.9
068 069	Standard deviation Carbon dioxide content, ppm	0.2 (b)	0.3 (b)	6.7 (b)	0.6 (b)	0.2 (b)	0.1 (b)	0.2 (b)	0.7 (b)	0.4 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 144540	(b) 109840	(b) 162542	(b) 130220	(b) 138560	(b) 140190	(b) 118730	(b) 114690	(b) 125130
070 071 071	Standard deviation Sulfur oxide content, ppm Standard deviation	6768 81 210	5550 3 3	3376 775 61	8565 22 54	3376 6 4	6091 6 5	4964 0 0	6226 1 2	2451 28 45
072 072 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm	(b) (b) 42856	(b) (b) 76835	(b) (b) 20264	(b) (b) 57534	(b) (b) 48087	(b) (b) 45329	(b) (b) 68549	(b) (b) 68877	(b) (b) 56949
073 074 074 075	Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas tempera-	7643 5.5 1.6 213	4709 4.9 0 217	2336 7.6 2.5 213	4567 5.7 1.9 217	2265 6.8 2.4 211	6753 6.3 2.2 208	3781 4.9 0 193	8914 4.9 0 223	2836 4.9 0 220
J, J	ture, F	213		220	 /		200	100	223	

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071	Standard deviation	210	3	61	54	4	5	0	2	45
072	Sulfur oxide content, ppm	(b)	(ь)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
073	Oxygen content, ppm	42856	76835	20264	57534	48087	45329	68549	68877	56949
073	Standard deviation	7643	4709	2336	4567	2265	6753	3781	8914	2836
074	SO _x permissive signal	5.5	4.9	7.6	5.7	6.8	6.3	4.9	4.9	4.9
074	Standard deviation	1.6	0	2.5	1.9	2.4	2.2	0	0	0
075	Gas analyzer gas tempera- ture, °F	213	217	213	217	211	208	193	223	220
075	Standard deviation	4	4	8	6	7	7	2	2	1
057	Sample gas pressure, psia	25.9	22.7	26.0	25.1	26.1	26.2	27.2	26.1	25.9
057	Standard deviation	0.1	4.3	0.1	1.7	0.1	0.1	0.1	0	0.1
089	Sample line differential temperature, °F	146	146	146	146	146	145	131	146	146
089	Standard deviation	1	1	0	0	0	0	6	0	0
090	Sample line temperature,	214	213	213	214	214	214	213	213	213
090	Standard deviation	1	1	1	1	2	2	1	1	1
091	Sample line temperature,	283	285	286	286	285	284	287	284	284
	°F									
091	Standard deviation	1	1	1	1	0	0	1	0	0
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
140	°F	(2)	(5)	(5)	(~)	(-)	(-)	(-)	(-/	. ,
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Sample line differential	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)
100	temperature, °F	(2)	(5)	(5)	(5)	(2)	(~)	(-)	(-/	\ <i>\</i>
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F									
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C34	SO _x concentration, ppm	6	3	731	6	5	5	Ō	1	28
C34	Standard deviation	0	3	42	4	2	5	0	2	45
C46	NO _x concentration, lb/MBtu	0.312	0.383	0.039	0.362	0.380	0.213	0.459	0.481	0.425
C46	Standard deviation	0.064	0.035	0.011	0.191	0.232	0.023	0.028	0.107	0.037
C47	SO _x concentration, lb/MBtu	0.012	0.008	1.655	0.016	0.009	0.012	0.001	0.002	0.056
C47	Standard deviation	0	0.009	0.073	0.012	0.003	0.011	0	0.004	0.090
C49	Exhaust sulfur, percent	0.41	0.27	56.34	0.53	0.31	0.41	0.03	0.07	1.92
- · ·	of input									
C49	Standard deviation	0	0.30	2.49	0.41	0.09	0.39	0.01	0.14	3.06

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

2 W 31

TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

	Data	Parameter	Test										
	chan- nel		F19	F16	F27	G2	G3	G6	G1	G5			
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)			
	027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b)			
	026 063	Standard deviation Nitrogen oxides con-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)			
	063 064	tent, ppm Standard deviation Nitrogen oxides con- tent, ppm	(b) 205	(b) 205	(b) 359	(b) 232	(b) 185	(b) 188	(b) 201	(b) 231			
7	064 065	Standard deviation Carbon monoxide con- tent, ppm	19 (b)	12 (b)	31 (b)	10 (b)	7 (b)	10 (b)	(p)	8 (b)			
	065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 12	(b) 13	(b) 14	(b) 10	(b) 10	(b) 9	(b) 22	(b) 10			
FOI DOITE FOR TOTAL	066 067	Standard deviation Hydrocarbon content,	2 (b)	1 (b)	2 (b)	0 (b)	3 (b)	1 (b)	1 (b)	1 (b)			
•	067 068	ppm Standard deviation Hydrocarbon content,	(b) 1.4	(b) 1.1	(b) 0.5	(b) 3.8	(b) 2.3	(b) 1.4	(b) 1.7	(b) 1.8			
•	068 069	ppm Standard deviation Carbon dioxide content,	0.5 (b)	0.2 (b)	0.1 (b)	0.4 (b)	0.5 (b)	0.1 (b)	0.2 (b)	0.3 (b)			
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 113990	(b) 115120	(b) 116520	(b) 70524	(b) 65023	(b) 67800	(b) 69796	(b) 77121			
	070 071 071 072 072 073 073 074 074	ppm Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas tempera—	2483 (b) (b) 1 0 73237 1825 4.9 0 219	3501 (b) (b) 8 4 71494 5472 4.9 0 217	1931 (b) (b) 25 28 62366 1792 4.9 0	3044 (b) (b) 5 5 144530 3021 4.9 0 225	5535 (b) (b) 82 24 144080 7809 4.9 0	3588 (b) (b) 84 18 139170 5411 4.9 0 212	2331 (b) (b) 18 37 125580 2624 4.9 0 199	2954 (b) (b) 206 43 119120 3461 4.9 0			
ختص	ares (Consideration and assessment	ture, °F		enisered Schambacht in in	addresses i betklike stiven		ladio ser in propositività di la della		ožić žini že zave dravovanstite				

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072	Sulfur oxide content, ppm	1	8	25	5	82	84	18	206
072	Standard deviation	0	4	28	5	24	18	37	43
073	Oxygen content, ppm	73237	71494	62366	144530	144080	139170	125580	119120
073 ,074	Standard deviation	1825	5472	1792	3021	7809	5411	2624	3461
074	SO _X permissive signal Standard deviation	4.9 0	4.9	4.9	4.9	4.9	4.9	4.9	4.9
075	Gas analyzer gas tempera-	219	0 217	0	0	0	0	100	100
	ture, °F	219	217	219	225	217	212	199	199
075	Standard deviation	0	1	3	9	3	4	2	2
057	Sample gas pressure, psia	26.2	26.1	25.0	31.3	33.4	33.5	28.6	28.7
057	Standard deviation	0	0.1	2.9	5.7	0.1	0.1	0.1	0.2
089	Sample line differential temperature, °F	146	146	146	146	146	146	145	145
089	Standard deviation	0	0	0	1	0	0	0	0
090	Sample line temperature,	214	214	214	213	213	213	213	214
090	Standard deviation	1	1	1	0	0	0	0	0
091	Sample line temperature,	285	285	285	266	267	263	248	247
091	r Standard deviation	0	0	1	4	1	1	1	1
146	Sample line temperature,	(b)	(b)						
1.46	°F	/1. \	71.3	(1.)	(1.)	4.5	/1.	(,)	
146 150	Standard deviation Sample line differential	(b) (b)	(b)						
130	temperature, °F	(0)	(0)	(n)	(0)	(D)	(u)	(b)	(b)
150	Standard deviation	(b)	(b)						
157	Sample port gas tempera- ture, °F	(b)	(b)						
157	Standard deviation	(b)	(b)						
159	Sample line wall tempera-	(b)	(b)						
159	ture, °F Standard deviation	(b)	(b)						
C34	$SO_{\mathbf{X}}$ concentration, ppm	1	8	14	6	82	84	18	206
C34	Standard deviation	Ō	4	9	5	24	18	37	43
C46	NO _x concentration, 1b/MBtu	0.344	0.354	0.632	0.642	1.656	0.596	0.508	0.551
C46	Standard deviation	0.069	0.033	0.139	0.281	2.893	0.097	0.137	0.092
C47	SO _X concentration, lb/MBtu	0.001	0.020	0.067	0.019	1.120	0.363	0.072	0.691
C47	Standard deviation	0.001	0.010	0.090	0.015	2.082	0.063	0.144	0.213
C49	Exhaust sulfur, percent of input	0.05	0.68	2.28	0.86	38.12	12.36	2.46	23.50
C49	Standard deviation	0.03	0.33	3.06	0.51	70.86	2.13	4.91	7.26

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

num (229)

TABLE 4. - Continued.

		、	,			_					
	Data	Parameter					Test				
	chan- nel		G10	G9	G13	G12	G15A	B15B	G14	G11	G7
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	027	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	026	Sample gas pressure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	026	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	063	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	063	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	064	Nitrogen oxides con- tent, ppm	216	197	167	213	201	194	163	194	153
	064	Standard deviation	6	14	6	9	17	16	8 (L)	10	3 (b)
	065	Carbon monoxide con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	065	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	066	Carbon monoxide con- tent, ppm	13	9	12	5	10	10	9	17	11
	066	Standard deviation	1	2	3	1	2	2 (\)	2 (h)	28 (b)	3 (b)
	067	Hydrocarbon content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	067	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	068	Hydrocarbon content, ppm	3.3	1.6	1.5	0.9	1.7	1.1	0.4	1.1	1.4
	068	Standard deviation	0.4	0.5	0.7	0.7	0.2	0.3	0.1	0.1	0.4
	069	Carbon dioxide content,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	069	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	070	Carbon dioxide content,	68851	68052	60930	75939	70390	67748	67903	72948	61277
	070	Standard deviation	1670	3553	2953	3780	6095	4617	5062	4664	2543
	071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) 96	(b) 29
	072	Sulfur oxide content, ppm	182	140	182	189	150	104	91 10	52	13
	072	Standard deviation	25	26	130100	36 119310	72 129940	18 132020	132770	123170	140060
	073	Oxygen content, ppm	130740	127030	138180 3910	4526	7448	5828	5323	4162	2764
	073 074	Standard deviation	1744 4.9	5828 4.9	4.9	4520	4.9	4.9	4.9	4.9	4.9
	074	SO _X permissive signal Standard deviation	0	0	0	0	0	0	0	0	0
	074	Gas analyzer gas tempera-	202	211	199	189	180	173	169	178	183
	073	ture, °F	202	L ± ±	133	103	200				
	075	Standard deviation	5	4	3	3	16	3	1	3	12
er day	057	Sample gas pressure,	28.5	28.6	28.7	28.6.	<u>28.7</u>	28.6	28.7	27.7	28.6

071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	182	140	182	189	150	104	91	96	29
072	Standard deviation	25	26	13	36	72	18	10	52	13
073	Oxygen content, ppm	130740	127030	138180	119310	129940	132020	132770	123170	140060
073	Standard deviation	1744	5828	3910	4526	7448	5828	5323	4162	2764
. 074	SO _X permissive signal	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
074	Standard deviation	0	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, °F	202	211	199	189	180	173	169	178	183
075	Standard deviation	5	4	3	3	16	3	1	3	12
057	Sample gas pressure, psia	28.5	28.6	28.7	28.6	28.7	28.6	28.7	27.7	28.6
057	Standard deviation	0.2	0.1	0	0	0	0.1	0	2.2	0
089	Sample line differential temperature, °F	145	145	145	145	145	145	145	145	145
089	Standard deviation	1	0	0	0	0	1	0	1	· O
090	Sample line temperature,	213	213	213	213	213	213	213	213	213
	°F									
090	Standard deviation	0	0	0	0	0	0	0	0	0
091	Sample line temperature,	252	256	245	242	248	251	246	248	251
091	Standard deviation	2	2	1	1	4	1	0	1	4
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	°F	, ,	. ,	` ,	, ,	• •			• •	• •
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera- ture, F	(b) (b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C34	SO_{x} concentration, ppm	182	1 40	182	189	150	<u>104</u>	91	96	`29
C34	Standard deviation	25	26	13	36	72	18	10	52	13
C46	NO _X concentration, lb/MBtu	0.643	0.511	0.500	0.545	0.649	1.234	0.575	0.626	1.206
C46	Standard deviation	0.109	0.144	0.040	0.010	0.069	0.784	0.119	0.058	1.112
C47	SO _x concentration, lb/MBtu	0.760	0.514	0.762	0.672	0.657	0.873	0.445	0.415	0.369
C47	Standard deviation	0.180	0.189	0.076	0.125	0.247	0.545	0.106	0.183	0.527
C49	Exhaust sulfur, percent of input	25.87	17.51	25.93	22.88	22.37	29.71	15.15	14.11	12.57
C49	Standard deviation	6.14	6.43	2.58	4.24	8.40	18.56	3.61	6.22	17.95

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TABLE 4. - Continued.

				•					
Data	Parameter				T	est			
chan- nel		G8	G16	G22	G23	G24	G17	G18	G19
	C	/ - \	/ ե \	/ L \	/ 5.	/h)	/h)	/b)	(b)
027	Sample gas temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
026	Sample gas pressure, psia	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
026	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
063	Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
063	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
064	Nitrogen oxides con-	166	191	177	189	185	161	188	194
064	tent, ppm Standard deviation	6	9	5	8	8	8	7	5
065	Carbon monoxide con-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
065	tent, ppm Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
066	Carbon monoxide con- tent, ppm	13	8	10	13	8	7	9	12
066	Standard deviation	3	1	2	. 1	. 2	. 3	2	1
067	Hydrocarbon content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
067	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
068	Hydrocarbon content, ppm	1.7	1.1	1.6	3.4	0.9	(b)	1.1	2.2
068	Standard deviation	0.5	0.2	0.3	0	0.3	(b)	0.3	0.1
069	Carbon dioxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
069	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
070	Carbon dioxide content, ppm	61602	72362	67999	63998	69109	63216	69060	69282
070	Standard deviation	2794	4575	3011	2988	3282	4760	2494	2118
071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(þ)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	152	245	146	203	204	139	175	180
072	Standard deviation	11	44	17	24	33	15	25	40
073	Oxygen content, ppm	137140	127300	131440	138440	132810	141070	135960	136480
073	Standard deviation	2528	5301	3722	4533	3068	5292	2849	3745
074	SO _X permissive signal	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
074	Standard deviation	0	0	0	0	100	176	105	105
075	Gas analyzer gas tempera- ture, F	202	202	198	202	183	176	185	195
07E	UII CHARLES AND				meneral land	1.1	ikinomi mano ina Kal		. Competenmenter

क्ट्राट्स क्रमणका प्राप्तः		eurrur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(p)	(b)	(b)
	071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) 139	(b) 175	(b) 180
	072 072	Sulfur oxide content, ppm Standard deviation	152 11	245 44	146 17	203 24	204 33	159	25	40
	073	Oxygen content, ppm	137140	127300	131440	138440	132810	141070	135960	136480
	073	Standard deviation	2528	5301	3722	4533	3068	5292	2849	3745
	074	SO _x permissive signal	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	074	Standard deviation	0	0	0	0	0	0	0	0
	075	Gas analyzer gas tempera- ture, F	202	202	198	202	183	176	185	195
	075	Standard deviation	1	1	2	4	11	5	7	3
	057	Sample gas pressure, psia	28.7	28.7	28.7	28.6	28.7	28.8	28.8	28.6
	057	Standard deviation	0.1	0	0.1	0	0	0	0.1	0.1
	089	Sample line differential temperature, °F	146	146	145	145	145	146	145	145
	089	Standard deviation	0	0	0	0	1 213	1 213	0 214	1 213
	090	Sample line temperature,	213	213	213	213	213	213	214	213
	090	Standard deviation	0	0	0	0	0	1	1	0
	091	Sample line temperature,	258	255	255	256	252	247	245	250
		°F		_		_	_	_		•
	091	Standard deviation	0	0	2	2	2	1	1	2 (h)
	146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	150	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		temperature, °F								
i y j	150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
FOLDOUT	157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
2	157	Standard deviation	(b)	(b)	(p)	(b)	(b)	(p)	(b)	(b)
	159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
R _A	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
ERAME	C34	SO _X concentration, ppm	152 11	245	146	203 24	204 33	139 15	175 25	180 40
154	C34 C46	Standard deviation	1.928	44 0.631	17 1.643	0.627	0.628	0.640	0.521	0.636
7		NO _x concentration, lb/MBtu								
•	C46	Standard deviation	2.976	0.078	2.437	0.102	0.076	0.265	0.185	0.126 0.831
	C47	SO _x concentration, lb/MBtu	2.469	1.124	1.919	0.947	0.971	0.773	0.659	
	C47	Standard deviation	3.814	0.248	2.977	0.218	0.073	0.333	0.230	0.274
	C49	Exhaust sulfur, percent of input	84.02	38.25	65.32	32.23	33.07	26.31	22.45	28.27
	C49	Standard deviation	129.82	8.45	101.3	7.42	2.48	11.35	7.82	9.34

bData or results were not obtained.



TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		Н1	H2	НЗ	H4	H5A	H5B	Н6	Н7	Н8
027	Sample gas temperature,	(b)	(b)	(b)						
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 110	(b) 168	(b) 144	(b) 94	(b) 265	(b) 260	(b) 226	(b) 219	(b) 193
064 065	Standard deviation Carbon monoxide con- tent, ppm	6 (b)	6 (b)	21 (b)	11 (b)	14 (b)	3 (b)	105 (b)	5 (b)	10 (b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 123	(b) 83	(b) 229	(b) 255	(b) 66	(b) 35	(b) 1951	(b) 23	(b) 24
066 067	Standard deviation Hydrocarbon content, ppm	45 (b)	23 (b)	43 (b)	35 (b)	5 (b)	1 (b)	3811 (b)	3 (b)	(b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) 0.6	(b) 0.9	(b) 2.5	(b) 2.3	(b) 1.1	(b) 0.9	(b) 111.3	(b) 2.0	(b) 1.7
068 069	Standard deviation Carbon dioxide content, ppm	0.3 (b)	0.4 (b)	0.5 (b)	0.5 (b)	0.2 (b)	0.6 (b)	189.3 (b)	0.1 (b)	0.2 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 122980	(b) 105070	(b) 112030	(b) 129630	(b) 132000	(b) 116190	(b) 127740	(b) 111120	(b) 128430
070 071 071	Standard deviation Sulfur oxide content, ppm Standard deviation	3306 (b) (b)	2413 (b) (b)	5430 (b) (b)	5643 (b) (b)	2261 (b) (b)	1577 (b) (b)	19231 (b) (b)	792 (b) (b)	3380 (b) (b)
072 072 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm	549 66 60805	435 22 78564	253 63 77017	595 91 55758	1033 89 53668	792 25 74008	1695 1433 58346	824 30 82779	925 199 61604
073 074 074 075	Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas tempera-	2398 5.0 0 283	4213 5.0 0 305	5866 5.0 0 266	5370 5.0 0 252	2028 5.0 0 320	2689 5.0 0 255	28415 5.0 0 251	1261 5.0 0 237	2997 5.0 0 246
075	ture, F Standard deviation	4	3	35 20 9	29	1	29.2	22 28.2	1 29-6	23 29.4

erttadek assen om us	··· U/U	Standard deviation	3306	2413	5430	5643	2261	1577	19231	792	3380
	071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	071 072	Standard deviation Sulfur oxide content, ppm	(b) 549	(b) 435	(b) 253	(b) 595	(b) 1033	792	1695	824	925
	072	Standard deviation	66	22	63	91	89	25	1433	30	199
	073	Oxygen content, ppm	60805	78564	77017	55758	53668	74008	58346	82779	61604
	073	Standard deviation	2398	4213	5866	5370	2028	2689 5.0	28415 5.0	1261 5.0	2997 5.0
	074 074	SO _X permissive signal Standard deviation	5.0 0	5.0 0	5.0 0	5.0 0	5.0 0	0	0	0	0
	075	Gas analyzer gas tempera- ture, F	283	305	266	252	320	255	251	237	246
	075	Standard deviation	4	3	35	29	1	1	22	1	23
	057	Sample gas pressure, psia	29.6	29.8	29.2	29.2	28.8	29.2	28.2	29.6	29.4
	057	Standard deviation	0	0.1	0	0	0.1	0.1	2.2	0.1	0.1
	089	Sample line differential temperature, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	089 090	Standard deviation Sample line temperature,	(b) 95	(b) 100	(b) 95	(b) 94	(b) 107	(b) 117	(b) 94	(b) 100	(b) 109
	090	Standard deviation	3	1	0	1	3	1	2	1	4
	091	Sample line temperature, °F	258	253	249	250	255	258	252	252	256
	091 146	Standard deviation Sample line temperature,	2 (b)	2 (b)	3 (b)	1 (b)	1 (b)	1 (b)	1 (b)	1 (b)	3 (b)
		°F							(,)	/ · · ·	/ \
	146 150	Standard deviation Sample line differential	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
		temperature, °F	•								
123	150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b) (b)
FOLDOUT	157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)			
JOC	157	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)	(b)
H	159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
FRAME	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
M	C34	SO _X concentration, ppm	549	435	253 63	601 94	1033 89	792 25	979 73	824 30	925 199
P3	C34 C46	Standard deviation NO _x concentration,	66 0.182	22 0.354	0.309	0.165	0.442	0.478	0.399	0.443	0.383
٦		lb/MBtu									
•	C46	Standard deviation	0.011	0.063	0.074	0.014	0.022	0.011	0.198	0.060	0.052
	C47	SO _X concentration, Ib/MBtu	1.263	1.266	0.734	1.490	2.402	2.032	2.454	2.331	2.500
	C47	Standard deviation	0.141	0.139	0.139	0.367	0.253	0.051	0.300	0.400	0.416
	C49	Exhaust sulfur, percent of input	42.98	43.09	24.99	50.70	81.77	69.16	83.52	79.33	85.10
	C49	Standard deviation	4.79	4.73	4.74	12.48	8.63	1.73	10.20	13.63	14.16

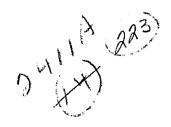


TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		Н9	H10	H11	H12	H14	H13	H15	H16	H18
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 209	(b) 233	(b) 214	(b) 139	(b) 228	(b) 167	(b) 171	(b) 201	(b) 179
064 065	Standard deviation Carbon monoxide con-	6 (b)	4 (b)	6 (b)	8 (b)	18 (b)	17 (b)	17 (b)	24 (b)	11 (b)
065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 23	(b) 19	(b) 19	(b) 61	(b) 21	(b) 103	(b) 161	(b) 123	(b) 61
066 067	tent, ppm Standard deviation Hydrocarbon content,	4 (b)	(b)	4 (b)	11 (b)	3 (b)	18 (b)	17 (b)	19 (b)	13 (b)
067 068	ppm Standard deviation Hydrocarbon content,	(b) 1.7	(b) 1.2	(b) 0.3	(b) 0.6	(b) 0.3	(b) 7.6	(b) 8.3	(b) 5.3	(b) 0.5
068 069	ppm Standard deviation Carbon dioxide content, ppm	0.1 (b)	0.3 (b)	0.2 (b)	0.2 (b)	0.1 (b)	3.3 (b)	0.3 (b)	3.1 (b)	0.2 (b)
069 070	Standard deviation Carbon dioxide content,	(b) 127320	(b) 115720	(b) 128900	(b) 129060	(b) 125200	(b) 117900	(b) 131430	(b) 117540	(b) 137580
070 071 071	ppm Standard deviation Sulfur oxide content, ppm Standard deviation	2759 (b) (b)	2059 (b) (b)	3136 (b) (b)	4211 (b) (b)	3221 (b) (b)	8694 (b) (b)	4363 (b) (b)	5458 (b) (b)	4852 (b) (b)
072 072 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm	830 107 62919	603 77 78812	680 59 62833	478 135 60565	528 37 66351	209 113 75845	37 14 52417	13 8 71140	612 288 50677
073 074 074	Standard deviation SO _X permissive signal Standard deviation	4356 5.0 0	3206 5.0 0	3523 5.0 0	5116 5.0 0	4220 5.0 0	6887 5.0 0	4831 4.9 0	7456 4.9 0 237	5833 4.9 0 244
075	Gas analyzer gas tempera-	319	259	236	212	223	210	225	23/	244

070	Carbon dioxide content,	127320	115720	128900	129060	125200	117900	131430	117540	137580
070	ppm Standard deviation	2759	2059	3136	4211	3221	8694	4363	5458	4852
071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	830	603	680	478	528	209	37	13	612
072	Standard deviation	107	77	59	135	37	113	14	8	288
073	Oxygen content, ppm	62919	78812	62833	60565	66351	75845	52417	71140	50677
073	Standard deviation	4356	3206	3523	5116	4220	6887	4831	7456	5833
074	SO _X permissive signal	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.9	4.9
074	Standard deviation	0	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	319	259	236	212	223	210	225	237	244
075	Standard deviation	1	35	17	19	8	10	20	17	33
057	Sample gas pressure, psia	29.6	29.6	29.8	30.0	29.8	29.7	28.9	28.8	29.1
057	Standard deviation	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1
089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(p)	(b)	(b)	(þ)	(b)	(Þ)	(b)	(b)	(ь) 100
090	Sample line temperature,	107	103	98	89	95	70	86	99	100
000		2	1	2	2	າ	2	1	າ	2
090	Standard deviation	3	257	2	3	3	3 249	4 255	3 259	2 259
091	Sample line temperature, °F	259	257	252	248	247	249	200	259	259
091	Standard deviation	0	1	2	1	5	1	2	2	1
091 146	Standard deviation Sample line temperature,	(b)	1 (b)	2 (b)	1 (b)	5 (b)	1 (b)	2 (b)	2 (b)	1 (b)
146	Sample line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
146 146	Sample line temperature, °F Standard deviation	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
146	Sample line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
146 146	Sample line temperature, F Standard deviation Sample line differential	(b) (b) (b)	(b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b)
146 146 150 150 157	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)
146 146 150 150 157 157	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b)
146 146 150 150 157 157 159	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)
146 146 150 150 157 157 159	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)
146 146 150 150 157 157 159 159 C34	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sample line wall temperature, F Standard deviation SO _X concentration, ppm	(b) (b) (b) (b) (b) (b) (b) (b) 830	(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b) (b) 464	(b) (b) (b) (b) (b) (b) (b) 528	(b) (b) (b) (b) (b) (b) (b) 209	(b) (b) (b) (b) (b) (b) (b) (b) 30	(b) (b) (b) (b) (b) (b) (b) (b) 13	(b) (b) (b) (b) (b) (b) 492
146 146 150 150 157 157 159 159 C34 C34	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Somple line wall temperature, F Standard deviation Some concentration, ppm Standard deviation	(b) (b) (b) (b) (b) (b) (b) (b) 830 107	(b) (b) (b) (b) (b) (b) (b) 603 77	(b) (b) (b) (b) (b) (b) (b) 680 59	(b) (b) (b) (b) (b) (b) (b) 464 136	(b) (b) (b) (b) (b) (b) (b) 528 37	(b) (b) (b) (b) (b) (b) (b) 209 113	(b) (b) (b) (b) (b) (b) (b) 30	(b) (b) (b) (b) (b) (b) (b) (b) 13 8	(b) (b) (b) (b) (b) (b) 492 118
146 150 150 157 157 159 159 C34 C46	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Somple line wall temperature, F Standard deviation Some concentration, ppm Standard deviation Nom concentration, lb/MBtu	(b) (b) (b) (b) (b) (b) (b) 830 107 0.428	(b) (b) (b) (b) (b) (b) (b) 603 77 0.561	(b) (b) (b) (b) (b) (b) (b) 680 59 0.520	(b) (b) (b) (b) (b) (b) 464 136 0.306	(b) (b) (b) (b) (b) (b) 528 37 0.479	(b) (b) (b) (b) (b) (b) (b) 209 113 0.294	(b) (b) (b) (b) (b) (b) (b) 30 30.271	(b) (b) (b) (b) (b) (b) (b) 13 8 0.358	(b) (b) (b) (b) (b) (b) 492 118 0.321
146 146 150 150 157 157 159 159 C34 C46	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sox concentration, ppm Standard deviation NOx concentration, lb/MBtu Standard deviation	(b) (b) (b) (b) (b) (b) (b) 830 107 0.428 0.038	(b) (b) (b) (b) (b) (b) 603 77 0.561	(b) (b) (b) (b) (b) (b) (680 59 0.520 0.043	(b) (b) (b) (b) (b) (b) 464 136 0.306	(b) (b) (b) (b) (b) (b) 528 37 0.479	(b) (b) (b) (b) (b) (b) 209 113 0.294 0.051	(b) (b) (b) (b) (b) (b) 30 30.271	(b) (b) (b) (b) (b) (b) 13 8 0.358	(b) (b) (b) (b) (b) (b) 492 118 0.321
146 146 150 150 157 157 159 159 C34 C34 C46 C47	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Somple line wall temperature, F Standard deviation Some concentration, ppm Standard deviation Nome concentration, lb/MBtu Standard deviation Some concentration, lb/MBtu	(b) (b) (b) (b) (b) (b) 830 107 0.428 0.038 2.351	(b) (b) (b) (b) (b) (b) 603 77 0.561 0.063 2.040	(b) (b) (b) (b) (b) (b) 680 59 0.520 0.043 2.300	(b) (b) (b) (b) (b) (b) 464 136 0.306 0.110 1.545	(b) (b) (b) (b) (b) (b) 528 37 0.479 0.032 1.549	(b) (b) (b) (b) (b) (b) 209 113 0.294 0.051 0.495	(b) (b) (b) (b) (b) (b) (b) 30 3 0.271 0.035 0.066	(b) (b) (b) (b) (b) (b) 13 8 0.358 0.067 0.031	(b) (b) (b) (b) (b) (b) 492 118 0.321 0.067 1.308
146 146 150 150 157 157 159 159 C34 C34 C46 C47	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Sox concentration, ppm Standard deviation NOx concentration, 1b/MBtu Standard deviation Sox concentration, 1b/MBtu Standard deviation	(b) (b) (b) (b) (b) (b) (b) 830 107 0.428 0.038 2.351	(b) (b) (b) (b) (b) (b) 603 77 0.561 0.063 2.040	(b) (b) (b) (b) (b) (b) (b) 680 59 0.520 0.043 2.300 0.278	(b) (b) (b) (b) (b) (b) 464 136 0.306 0.110 1.545	(b) (b) (b) (b) (b) (b) 528 37 0.479 0.032 1.549 0.159	(b) (b) (b) (b) (b) (b) 209 113 0.294 0.051 0.495	(b) (b) (b) (b) (b) (b) 30 30.271 0.035 0.066	(b) (b) (b) (b) (b) (b) (b) 13 8 0.358 0.067 0.031	(b) (b) (b) (b) (b) (b) 492 118 0.321 0.067 1.308
146 146 150 150 157 157 159 159 C34 C34 C46 C47	Sample line temperature, F Standard deviation Sample line differential temperature, F Standard deviation Sample port gas temperature, F Standard deviation Sample line wall temperature, F Standard deviation Somple line wall temperature, F Standard deviation Some concentration, ppm Standard deviation Nome concentration, lb/MBtu Standard deviation Some concentration, lb/MBtu	(b) (b) (b) (b) (b) (b) 830 107 0.428 0.038 2.351	(b) (b) (b) (b) (b) (b) 603 77 0.561 0.063 2.040	(b) (b) (b) (b) (b) (b) 680 59 0.520 0.043 2.300	(b) (b) (b) (b) (b) (b) 464 136 0.306 0.110 1.545	(b) (b) (b) (b) (b) (b) 528 37 0.479 0.032 1.549	(b) (b) (b) (b) (b) (b) 209 113 0.294 0.051 0.495	(b) (b) (b) (b) (b) (b) (b) 30 3 0.271 0.035 0.066	(b) (b) (b) (b) (b) (b) 13 8 0.358 0.067 0.031	(b) (b) (b) (b) (b) (b) 492 118 0.321 0.067 1.308

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TABLE 4. - Continued.

		-						
	Data	Parameter			Te	st		
	chan- nel		H19	H20	H23	H24	H25	H26
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)
	027 026	Standard deviation Sample gas pressure,	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
	026 063	psia Standard deviation Nitrogen oxides con-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	063	tent, ppm Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	064	Nitrogen oxides con- tent, ppm	139	179	361	194	189	165
	064 065	Standard deviation Carbon monoxide con-	11 (b)	8 (b)	20 (b)	15 (b)	8 (b)	9 (b)
	065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 22	(b) 24	(b) 85	(b) 24	(b) 22	(b) 22
	066 067	tent, ppm Standard deviation Hydrocarbon content,	4 (b)	3 (b)	0 (b)	2 (b)	2 (b)	3 (b)
	067 068	ppm Standard deviation Hydrocarbon content,	(b) (b)	(b) 0.8	(b) 1.3	(b) 0.5	(b) (b)	(b) 0.1
	068	ppm Standard deviation	(b)	0.3	0.8	0.3	(b)	0.1
	069	Carbon dioxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)
	069 070	Standard deviation Carbon dioxide content,	(b) 135250	(b) 134570	(b) 122570	(b) 126830	(b) 128530	(b) 125770
	070 071	ppm Standard deviation Sulfur oxide content, ppm	6189 (b)	3782 (b)	13183 (b)	814 (b)	3587 (b)	3818 (b)
	071 072	Standard deviation Sulfur oxide content, ppm	(b) 333	(b) 158	(b) 12	(b) 52 44	(b) 56 41	(b) 92 49
	072 073 073	Standard deviation Oxygen content, ppm Standard deviation	101 57483 5295	70 55927 4659	9 66127 15235	58641 2356	55632 2409	57931 3706
	074 074	SO _X permissive signal Standard deviation	4.9	4.9	4.9	4.9 0	4.9 0	4.9 0
b3+1	075	Gas analyzer gas tempera- ture, F	221	223	229	143	177	202

0.0	nnm	100200	134370	122370	120030	120000	123//(
070	ppm Standard deviation	6189	3782	13183	814	3587	3818
071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	333	158	12	52	56	92
072	Standard deviation	101	70	9	44	41	49
073	Oxygen content, ppm	57483	55927	66127	58641	55632	57931
073	Standard deviation	5295	4659	15235	2356	2409	3706
074	SO _X permissive signal	4.9	4.9	4.9	4.9	4.9	4.9
074	Standard deviation	Ő	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	221	223	229	143	177	202
075	Standard deviation	5	14	59	29	21	11
057	Sample gas pressure, psia	29.8	29.8	26.9	24.8	28.4	30.0
057	Standard deviation	0	0	5.7	7.1	3.2	0.1
089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b) 87	(b)	(b)	(Ē)	(ь) 70
0 90	Sample line temperature, °F	94	87	90	89	76	70
090	Standard deviation	3	1	2	4	3	1
091	Sample line temperature, F	235	223	221	231	242	234
091	Standard deviation	15	1	11	18	3	6
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)
	°F	71.3	/1. \	/ . \	/ L \	/L\	/ ៤ \
146	Standard deviation	(b)	(b)	(b)	(b)	(b) (b)	(b)
150	Sample line differential temperature, F	(b)	(b)	(b)	(b)	(n)	(b)
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F	` '	` ,	` '	` '		
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera-	(b)	(b)	(b)	(b)	(b)	(b)
	ture, °F		4. 3		4. 3	<i>(</i> ,)	<i>/</i> . \
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
C34	SO _X concentration, ppm	283	148	13	75 27	56	92
C34	Standard deviation	60	68	10	37	41	49
C46	NO _X concentration, lb/MBtu	0.249	0.317	0.575	0.281	0.308	0.309
C46	Standard deviation	0.029	0.029	0.065	0.135	0.016	0.026
C47	SO _X concentration, lb/MBtu	0.746	0.364	0.027	0.140	0.125	0.238
C47	Standard deviation	0.197	0.181	0.021	0.106	0.089	0.129
C49	Exhaust sulfur, percent	25.38	12.39	0.92	4.78	4.26	8.10
C49	of input Standard deviation	6.72	6.15	0.73	3.59	3.03	4.38
		-	 -				

 $^{\mbox{\scriptsize b}}\mbox{\scriptsize Data}$ or results were not obtained.

TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

Data	Parameter					Test				
chan- nel		I1	12	13	14	I5A	I5B	16	17	18
027	Sample gas temperature,	(b)								
027 026	Standard deviation Sample gas pressure,	(b) (b)								
026 063	psia Standard deviation Nitrogen oxides con-	(b) (b)								
063 064	tent, ppm Standard deviation Nitrogen oxides con-	(b) 152	(b) 179	(b) 152	(b) 103	(b) 130	(b) 153	(b) 169	(b) 163	(b) 144
064 065	tent, ppm Standard deviation Carbon monoxide con-	13 (b)	7 (b)	6 (b)	8 (b)	10 (b)	5 (b)	23 (b)	6 (b)	8 (b)
065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 25	(b) 17	(b) 16	(b) 99	(b) 76	(b) 83	(b) 23	(b) 15	(b) 23
066 067	tent, ppm Standard deviation Hydrocarbon content,	6 (b)	7 (b)	4 (b)	22 (b)	8 (b)	7 (b)	7 (b)	3 (b)	3 (b)
067 068	ppm Standard deviation Hydrocarbon content,	(b) 0.7	(b) 1.5	(b) 1.1	(b) 1.5	(b) 0.6	(b) 1.3	(b) 0.5	(b) 1.2	(b) 1.5
068 069	ppm Standard deviation Carbon dioxide content,	0.3 (b)	0.3 (b)	0.3 (b)	0.2 (b)	0.2 (b)	0.8 (b)	0.5 (b)	0.2 (b)	0.9 (b)
069 070	ppm Standard deviation Carbon dioxide content,	(b) 129230	(b) 111510	(b) 139040	(b) 134910	(b) 121680	(b) 110200	(b) 131490	(b) 110940	(b) 131880
070 071	ppm Standard deviation Sulfur oxide content, ppm	3163 (b)	2852 (b)	3008 (b)	3961 (b)	4950 (b)	1972 (b)	5133 (b)	4608 (b)	5402 (b)
071 072 072	Standard deviation Sulfur oxide content, ppm Standard deviation	(b) 196 79	(b) 61 52	(b) 277 52	(b) 87 38	(b) 21 14	(b) 6 0	(b) 57 102	(b) 294 91	(b) 567 140
073 073 074	Oxygen content, ppm Standard deviation SO _x permissive signal	57184 4462 4.9	79062 5463 4.9	46901 3541 4.9	51091 4178 4.9	67940 5156 4.9	80942 1987 4.9	57196 3742 4.9	77041 4812 4.9	52281 4123 4.9
074 075	Standard deviation Gas analyzer gas tempera- ture, F	0 125	0 118	0 108	0 104	0 106	0 99	0 103	0 128	0 111

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	070 071	Standard deviation Sulfur oxide content, ppm	3163 (b)	2852 (b)	3008 (b)	3961 (b)	4950 (b)	1972 (b)	5133 (b)	4608 (b)	5402 (b)
	071 072	Standard deviation Sulfur oxide content, ppm	(b) 196	(b) 61	(b) 277	(b) 87	(b) 21	(b) 6	(b) 57	(b) 294	(b) 567
	072	Standard deviation	79	52	52	38	14	0	102	91	140
	073	Oxygen content, ppm	57184	79062	46901	51091	67940	80942	57196	77041	52281
	073	Standard deviation	4462	5463	3541	4178	5156	1987	3742	4812	4123
	074 074	SO _X permissive signal Standard deviation	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0
	074	Gas analyzer gas tempera-	125	118	108	104	106	99	103	128	111
		ture, F									_
	075	Standard deviation	20	30	2	6	13	4	26	17	7
	057	Sample gas pressure, psia	29.6	22.2	29.7	29.6	29.7	28.0	22.8	29.7	28.9
	057	Standard deviation	0	7.0	0	0	0.1	1.5	7.0	0	1.4
	089	Sample line differential	139	139	147	141	129	143	142	129	145
	089	temperature, °F Standard deviation	10	21	1	8	15	2	18	21	1
	090	Sample line temperature,	18 76	21 92	1 83	74	71	3 73	84	84	1 76
		°F	_	_	_			_			-
	090 091	Standard deviation Sample line temperature,	7 72	2 84	3 71	2 65	0 64	1 66	1 76	1 73	1 64
	091	F	12	04	/ 1	0.5	04	00	70	75	01
	091	Standard deviation	6	3	2	2	0	1	. 1	2	1 (b)
	146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)	(b)
	146	°F Standard deviation	(b)	(b)	(h)	(h)	(h)	(h)	(b)	(h)	(b)
	150	Sample line differential	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
!		temperature, F	/ L \	/ h. \	/ b)	/ L. \	/ L \	(5)	/ b .\	(h)	(b)
)	150 157	Standard deviation Sample port gas tempera-	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)
,	107	ture, °F	(5)	(2)	(2)						
	157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
r	159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C34	SO _X concentration, ppm	196	84	186	75 27	21	6	108	294	510 92
	C34	Standard deviation	79	38	0 264	37 0.314	14 0.371	0 0.397	125 0.322	91 0.328	0.313
	C46	NO _X concentration, lb/MBtu	0.348	0.329	0.364	0.314	0.3/1	0.397	0.322	0.320	0.313
	C46	Standard deviation	0.032	0.117	0.022	0.026	0.050	0.018	0.069	0.021	0.035
	C47	SO _X concentration,	0.620	0.202	0.645	0.320	0.084	0.021	0.176	0.825	1.566
	C47	Îb/MBtu Standard deviation	0.230	0.149	0	0.156	0.054	0.002	0.293	0.257	0.268
	C49	Exhaust sulfur, percent	21.09	6.87	21.94	10.91	2.85	0.70	5.99	28.09	53.30
		of input							0.00	0.70	
	C49	Standard deviation	7.83	5.07	0	5.31	1.84	0.06	9.98	8.73	9.11

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TABLE 4. - Continued.

		(11) 001101114040	00	o gas a.		- 0 0.								
	Data	Parameter	Test											
	chan- nel		19	I10A	I10B	I11	I12	113						
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)						
	027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b)	(b)	(b)	(b)						
	026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)						
	063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 113	(b) 89	(b) 140	(b) 282	(b) 283	(b) (b)						
	064 065	Standard deviation Carbon monoxide con—	6 (b)	10 (b)	16 (b)	51 (b)	44 (b)	(b)						
	065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 126	(b) 179	(b) 140	(b) 74	(b) 30	(d) 8						
	066 067	tent, ppm Standard deviation Hydrocarbon content,	33 (b)	33 (b)	14 (b)	13 (b)	8 (b)	0 (b)						
	067 068	ppm Standard deviation Hydrocarbon content,	(b) 1.2	(b) 1.6	(b) 1.6	(b) 1.7	(b) 2.2	(b) 1.4						
	068 069	ppm Standard deviation Carbon dioxide content,	0.2 (b)	0.5 (b)	0.3 (b)	0.5 (b)	0.4 (b)	(b)						
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 111450	(b) 127510	(b) 121450	(b) 125570	(b) 119390	(b) 420						
	070 071 071 072	ppm Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	5345 (b) (b) 263	4103 (b) (b) 296	7193 (b) (b) 55	5695 (b) (b) 8	5317 (b) (b)	0 (b) (b) 2						
	072 073 073 074 074	Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation	93 76345 5241 4.9 0	121 55993 5213 4.9 0	43 64526 6250 4.9	5 62806 5258 4.9 0	73940 5863 4.9	1 (b) (b) 4.9						
***	075	Gas analyzer gas tempera- ture, F	104	100	110	108	79	83						

	070	Standard deviation	5345	4103	7193	5695	5317	0
	071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)
	071	Standard deviation	(b)	(b)	(p)	(b)	(b)	(p)
	072	Sulfur oxide content, ppm	263	296	55	8	0	2
	072	Standard deviation	93	121	43	. 5	72040	1
	073	Oxygen content, ppm	76345	55993	64526	62806	73940	(b)
	073	Standard deviation	5241	5213	6250	5258	5863	(b)
	074 074	SO _X permissive signal Standard deviation	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0	4.9 0
	074	Gas analyzer gas tempera-	104	100	110	108	79	83
	075	ture, [*] F Standard deviation	22	16	19	16	1	2
-	057	Sample gas pressure, psia	26.9	23.7	26.0	27.7	30.0	16.3
	057	Standard deviation	4.9	5.4	6.4	4.5	0.1	5.2
	089 Sample line differential temperature, °F		143	148	139	144	(b)	(b)
	089	Standard deviation	18	11	11	9	(b)	(<u>b</u>)
	090	Sample line temperature,	71	72	75	78	66	`70
	090	Standard deviation	3	1	1	1	1	3
	091	Sample line temperature,	60	66	70	71	217	194
	091	Standard deviation	2	2	1	1	2	4
	146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)
		°F						
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
	150	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)
3	1.50	temperature, F	(b)	(b)	(b.)	(b)	(b)	(b)
Õ	150	Standard deviation	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
FOLDOUT, FRAME	157	Sample port gas tempera- ture, °F						
Š	157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
) FR	159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)
\geq	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)
Ã	C34	SO_X concentration, ppm	290	352	52	8	0	(b)
••	C34	Stândard deviation	54	29	49	6	0	(b)
7	C46	NO _x concentration, lb/MBtu	0.296	0.283	0.375	0.762	0.520	0.177
•	C46	Standard deviation	0.025	0.065	0.053	0.105	0.093	0.206
	C47	SO _X concentration, lb/MBtu	0.982	1.403	0.224	0.032	0.001	0.004
	C47	Standard deviation	0.343	0.647	0.179	0.021	0.001	0
	C49	Exhaust sulfur, percent	33.41	47.76	7.63	1.09	0.03	0.12
	C49	of input Standard deviation	11.66	22.01	6.08	0.72	0.02	0.01
	0 7 3	Statistic deviation			5.00	,-		

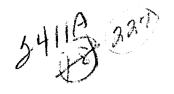


TABLE 4. - Continued.

Data	Parameter	Test											
chan- nel		J1	J2	J3	J4	J5	J6	J7	J8	J9			
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)			
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)	(b)	(b) (b)			
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)			
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 68	(b) 174	(b) 200	(b) 99	(b) 250	(b) 262	(b) 46	(b) 179	(b) 47			
064 065	Standard deviation Carbon monoxide con- tent, ppm	34 (b)	10 (b)	8 (b)	16 (b)	14 (b)	14 (b)	26 (b)	8 (b)	7 (b)			
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 121	(b) 73	(b) 26	(b) 57	(b) 51	(b) 30	(b) 111	(b) 120	(b) 383			
066 067	Standard deviation Hydrocarbon content, ppm	66 (b)	18 (b)	5 (b)	13 (b)	40 (b)	4 (b)	28 (b)	19 (b)	528 (b)			
067 068	Standard deviation Hydrocarbon content, ppm	(b) 41.2	(b) 7.1	(b) 1.5	(b) 1.6	(b) 14.5	(b) 2.2	(b) 2.2	(b) 2.3	(b) 17.0			
068 069	Standard deviation Carbon dioxide content, ppm	10.8 (b)	13.0 (b)	0.2 (b)	0.7 (b)	25.3 (b)	0.9 (b)	0.3 (b)	0.4 (b)	27.8 (b)			
069 070	Standard deviation Carbon dioxide content, ppm	(b) 141330	(b) 105180	(b) 97948	(b) 141890	(b) 104610	(b) 107250	(b) 150960	(b) 101930	(b) 144420			
070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	10105 (b) (b) 342	4445 (b) (b) 276	5382 (b) (b) 257	6052 (b) (b) 1136	6920 (b) (b) 686	6310 (b) (b) 1086	4016 (b) (b) 2376	5422 (b) (b) 938	7501 (b) (b) 1220			
072 073 073 074	Standard deviation Oxygen content, ppm Standard deviation SO _x permissive signal	309 41366 13437 6.7	26 82203 6812 5.0	96 89561 7717 5.0	486 34145 4148 7.2	87 80266 8391 5.0	184 79934 7801 5.0	901 20301 5159 7.5	115 82400 4030 5.0	218 27374 4850 7.1			
074 075	Standard deviation Gas analyzer gas tempera— ture. F	2.4 239	0 238	0 236	2.5 239	0 248	0 259	2.5 245	0 217	2.5 234			

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	070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	10105 (b) (b) 342	4445 (b) (b) 276	5382 (b) (b) 257	6052 (b) (b) 1136	6920 (b) (b) 686	6310 (b) (b) 1086	4016 (b) (b) 2376	5422 (b) (b) 938	7501 (b) (b) 1220
	072	Standard deviation	309	276 26	96	486	87	184	901	115	218
	073	Oxygen content, ppm	41366	82203	89561	34145	80266	79934	20301	82400	27374
	073	Standard deviation	13437	6812	7717	4148	8391	7801	5159	4030	4850
	074	SO _X permissive signal	6.7	5.0	5.0	7.2	5.0	5.0	7.5	5.0	7.1
	074	Standard deviation	2.4	0	0	2.5	0	0	2.5	0	2.5
	075	Gas analyzer gas tempera- ture, F	239	238	236	239	248	259	245	217	234
	075	Standard deviation	8	1	3	9	6	5	4	35	21
	057	Sample gas pressure, psia	27.2	28.9	28.9	28.8	28.8	28.7	28.9	28.8	27.5
	057	Standard deviation	4.6	. 0	0.1	0.2	0.1	0.1	0.1	(1.)	3.9
	089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	089	Standard deviation	(þ)	(b)	(b)	(b)	(b)	(b) 100	(b)	(b) 83	(b) 79
	090	Sample line temperature,	74	81	91	80	94		`84		
	090	Standard deviation	1	2	1	4	2	1	4	2	0
	091	Sample line temperature, °F	240	244	240	235	242	242	238	237	240
	091	Standard deviation	. 3	1	1	1	4	, 1	. 2	1	. 2
	146	Sample line temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	146	Standard deviation	(b)	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)
刨	150	Sample line differential temperature, F	(b)		(b)	(b)	(b)	(b)	(b)		(b)
2	150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
DOU	157	Sample port gas tempera- ture, F	(b)	(b)	(b)	(b)	(b)		(b)		(b)
H	157	Standard deviation	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(d) (d)	(b)	(b) (b)	(b)
FOLDOUT FRAME	159	Sample line wall tempera- ture, F	(b)		•				(b)	•	(b)
M	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	C34 C34	SO _X concentration, ppm Standard deviation	271 276	276 27	257 96	973 287	686 87	1086 184	1961 601	938 115	1088 89
-	C46	NO_{x} concentration,	0.080	0.302	0.382	0.126	0.496	0.457	0.053	0.313	0.052
		Îb/MBtu									
	C46 C47	Standard deviation SO _x concentration,	0.044 0.457	0.019 0.670	0.018 0.679	0.021 1.697	0.054 1.899	0.023 2.638	0.031 3.097	0.019 2.319	0.011 1.744
		Îb/MBtu									
	C47	Standard deviation	0.523	0.089	0.244	0.457	0.318	0.410	0.949	0.284	0.157
	C49	Exhaust sulfur, percent of input	11.19	16.39	16.60	41.51	46.47	64.54	75.76	56.73	42.66
	C49	Standard deviation	12.79	2.17	5.96	11.18	7.78	10.03	23.23	6.94	3.85

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TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

			(11)				=				
	Data	Parameter					Test				
	chan- nel		К1	К3	K4	K2	K7	K8	K6	K5	К9
	027	Sample gas temperature	, (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	027 026	Standard deviation Sample gas pressure, psia	(b)	(b)	(b)	(b)	(b)	(b) (b)	(b) (b)	(b)	(b)
	026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b) (b)
	063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 178	(b) 165	(b) 240	(b) 95	(b) 94	(b) 160	(b) 63	(b) 240	(b) 83
	064 065	Standard deviation Carbon monoxide con- tent, ppm	17 (b)	62 (b)	39 (b)	6 (b)	6 (b)	5 (b)	23 (b)	55 (b)	31 (b)
20	065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 88	(b) 54	(b) 20	(b) 85	(b) 91	(b) 80	(b) 84	(b) 18	(b) 52
	066 067	Standard deviation Hydrocarbon content, ppm	33 (b)	33 (b)	4 (b)	20 (b)	22 (b)	10 (b)	23 (b)	2 (b)	23 (b)
	067 068	Standard deviation Hydrocarbon content, ppm	(b) 2.3	(b) 3.6	(b) 0.9	(b) 1.3	(b) 1.4	(b) 1.4	(b) 0.8	(b) 2.8	(b) 1.2
-	068 069	Standard deviation Carbon dioxide content, ppm	1.1 (b)	7.8 (b)	0.2 (b)	0.2 (b)	0.2 (b)	0.2 (b)	0.2 (b)	2.6 (b)	0.5 (b)
	069 070	Standard deviation Carbon dioxide content.	(b) 115980	(b) 155050	(b) 105440	(b) 142410	(b) 138860	(b) 107780	(b) 159480	(b) 104920	(b) 159930
	070 071 071 072 072 073	ppm Standard deviation Sulfur oxide content, p Standard deviation Sulfur oxide content, p Standard deviation Oxygen content, ppm	(b)	4514 (b) (b) 1139 1676 30039	5436 (b) (b) 137 83 100500	3187 (b) (b) 583 173 48937	3205 (b) (b) 986 135 52040	3174 (b) (b) 707 44 90788	3114 (b) (b) 3351 1115 22528	2566 (b) (b) 164 165 95116	3846 (b) (b) 1969 716 32726
	073 074 074 075	Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas temper	11813 4.9 0	7277 7.5 2.5 235	8515 4.9 0 253	3939 6.2 2.2 230	3687 5.9 1.9 233	4823 5.0 0 233	1762 7.3 2.9 229	4402 4.9 0 217	4255 7.5 2.5 236

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U69	Standard deviation	(b)	(b)							
070	Carbon dioxide content,	115980	155050	105440	142410	138860	107780	159480	104920	159930
070	Standard deviation	12020	4514	5436	3187	3205	3174	3114	2566	3846
071	Sulfur oxide content, ppm	(b)	(b)							
071	Standard deviation	(b)	(b)							
072	Sulfur oxide content, ppm	408	1139	137	583	986	707	3351	164	1969
072	Standard deviation	208	1676	83	173	135	44	1115	165	716
073	Oxygen content, ppm	73978	30039	100500	48937	52040	90788	22528	95116	32726
073	Standard deviation	11813	7277	8515	3939	3687	4823	1762	4402	4255
074	SO _x permissive signal	4.9	7.5	4.9	6.2	5.9	5.0	7.3	4.9	7.5
074	Stândard deviation	0	2.5	0	2.2	1.9	0	2.9	0	2.5
075	Gas analyzer gas tempera- ture, F	229	235	253	230	233	233	229	217	236
075	Standard deviation	10	6	11	5	2	2	2	47	4
057	Sample gas pressure,	27.7	27.9	28.5	27.9	29.2	28.8	28.8	19.3	28.1
	psia	_,	_, _,							
057	Standard deviation	4.5	3.4	0.9	4.1	0.1	0.6	1.2	6.7	4.1
089	Sample line differential	(b)	(b)							
	temperature, °F	, ,	. ,	•						
089	Standard deviation	(b)	(b) 105	(b) 102						
090	Sample line temperature,	74	75	93	93	86	95	94	105	102
	°F									_
090	Standard deviation	5	4	_ 5	2	2	3	1	5	1
091	Sample line temperature,	235	237	242	231	233	235	229	198	219
	F					_	_			
091	Standard deviation	2	1	1	. 2	. 1	. 2	1	27	1
146	Sample line temperature,	(b)	(b)							
	°F								4	
146	Standard deviation	(b)	(b)							
150	Sample line differential	(b)	(b)							
	temperature, F		4.)	41.3	(1.)	4. \	/. \	/1.\	71.3	751
150	Standard deviation	(á)	(b)	(b)	(b)	(p)	(b)	(b)	(b)	(b)
157	Sample port gas tempera-	(b)	(b)							
	ture, °F	41.	/. \	/	/1.3	/1. \	(1.)	71.1	/L\	/ L \
157	Standard deviation	(b)	(b)							
159	Sample line wall tempera-	(b)	(b)							
	ture, °F		(1.1	/1. \	/1. \	/. \	(1.)	71.3	(1.)	/L\
159	Standard deviation	(b)	(b)							
C34	SO_X concentration, ppm	357	453	137	478	941	707	3133	313	2078
C34	Standard deviation	190	392	83	173	132	44	1009	170	750
C46	NO _x concentration, lb/MBtu	0.342	0.201	0.468	0.126	0.126	0.290	0.075	0.228	0.086
C46	Standard deviation	0.036	0.075	0.109	0.012	0.010	0.019	0.026	0.238	0.030
C47	SO _X concentration, lb/MBtu	0.997	0.962	0.371	0.933	1.750	1.789	5.265	0.482	3.105
C47	Standard deviation	0.497	0.783	0.234	0.318	0.224	0.146	1.861	0.462	1.147
C49	Exhaust sulfur, percent of input	24.39	23.54	9.07	22.82	42.82	43.77	128.8	11.79	75.97
C49	Standard deviation	12.15	19.17	5.72	7.79	5.49	3.58	45.53	11.29	28.07

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TABLE 4. - Continued.

(h) Continued. Combustion gas analysis data

		VV		J	Ū				
	Data	Parameter				Test			
	chan- nel		K10	K12	K11	K14	K13	K15	K16
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	027 026	Standard deviation Sample gas pressure, psia	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	026 063	Standard deviation Nitrogen oxides con-	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b)
	063 064	tent, ppm Standard deviation Nitrogen oxides con-	(b) 128	(b) 201	(b) 217	(b) 51	(b) 149	(b) 123	(b) 262
	064 065	tent, ppm Standard deviation Carbon monoxide con-	12 (b)	43 (b)	12 (b)	28 (b)	47 (b)	38 (b)	22 (b)
	065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 37	(b) 46	(b) 12	(b) 55	(b) 82	(b) 45	(b) 43
	066 067	tent, ppm Standard deviation Hydrocarbon content,	11 (b)	16 (b)	5 (b)	23 (b)	14 (b)	11 (b)	6 (b)
	067 068	ppm Standard deviation Hydrocarbon content,	(b) 3.2	(b) 2.0	(b) 3.0	(b) 1.7	(b) 3.2	(b) 1.2	(b) 1.5
	068 069	ppm Standard deviation Carbon dioxide content,	5.0 (b)	1.4 (b)	1.5 (b)	0.2 (b)	1.1 (b)	0.4 (b)	0.5 (b)
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 155470	(b) 108490	(b) 83078	(b) 162110	(b) 148580	(b) 156370	(b) 148720
	070 071 071	ppm Standard deviation Sulfur oxide content, ppm Standard deviation	2902 (b) (b)	1511 (b) (b)	48038 (b) (b)	4096 (b) (b)	5326 (b) (b)	3145 (b) (b)	2040 (b) (b)
	072 072 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm	1724 357 30706	137 85 88914	105 110 64827	2563 1279 23603	54 79 38782	1846 816 26105	387 155 31583
	073 074 074	Standard deviation SO _X permissive signal Standard deviation	2391 7.5 2.5	7141 5.0 0	35269 5.0 0	4777 7.5 2.5	4495 7.5 2.5	2905 7.5 2.5	1152 7.5 2.5
hidan.	075 	Gas analyzer gas tempera- ture, F	232	227	228	230	225	231	225

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U/I	Surrup oxide concent; ppm	(u)	(D)	(n)		assessed in A sec	· · · · · · · · /iniha.	
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	1724	Ì37	Ì05	2563	54	1846	387
072	Standard deviation	357	85	110	1279	79	816	155
073	Oxygen content, ppm	30706	88914	64827	23603	38782	26105	31583
073	Standard deviation	2391	7141	35269	4777	4495	2905	1152
074	SO _x permissive signal	7.5	5.0	5.0	7.5	7.5	7.5	7.5
074	Stândard deviation	2.5	0	0	2.5	2.5	2.5	2.5
075	Gas analyzer gas tempera- ture, F	232	227	228	230	225	231	225
075	Standard deviation	2	3	43	3	2	2	4
057	Sample gas pressure,	29.4	26.4	21.3	29.6	29.4	29.3	28.9
057	psia Standard deviation	0.1	4.2	7.0	0.1	0.1	0.1	0.2
089	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	temperature, °F				·			
089	Standard deviation	(b) 102	(ь) 101	(b) 113	(ь) 105	(b)	(þ)	(b) 100
090	Sample line temperature, °F	102	101	113	105	94	`98	100
090	Standard deviation	1	0	4	5	1	1	1
091	Sample line temperature,	219	216	192	218	220	220	219
	°F							
091	Standard deviation	1	2	19	1	2	1	0
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	°F							
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	temperature, F	7. 3		4. 3	/. \	/. \	/ 1 \	(1.)
150	Standard deviation	(b)	(b)	(p)	(b)	(b)	(b)	(b)
157	Sample port gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C34	SO _X concentration, ppm	1580	134	156	2299	51	1461	285
C34	Standard deviation	303	90	81	1007	74	563	73
C46	NO _x concentration, lb/MBtu	0.159	0.349	0.267	0.060	0.197	0.165	0.364
C46	Standard deviation	0.017	0.073	0.166	0.033	0.065	0.065	0.031
C47	SO _x concentration, lb/MBtu	2.723	0.337	0.306	3.808	0.097	2.570	0.553
C47	Standard deviation	0.514	0.206	0.284	1.664	0.141	0.901	0.142
C49	Exhaust sulfur, percent	66.63	8.25	7.50	93.16	2.37	62.87	13.54
-	of input					-	_	•
C49	Standard deviation	12.58	5.03	6.94	40.72	3.45	22.04	3.48

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TABLE 4. - Continued.

	Data	Parameter				Te	st			
	chan- nel		T3A	ТЗВ	T3C	T3D	T3E	T3F	T 4	T5
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	027 026	Standard deviation Sample gas pressure, psia	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)	(b)
	026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)
	063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 192	(b) 226	(b) 180	(b)	(b) 237	(b)	(b) 163	(b) 133
	064 065	Standard deviation Carbon monoxide con- tent, ppm	112 (b)	72 (b)	81 (b)	(b) (b)	83 (b)	(b)	51 (b)	21 (b)
	065 066	Standard deviation Carbon monoxide con-	(b) 10.9	(b) 11.9	(b) 18.7	(b) 1.6	(b) 12.5	(b) 10.3	(b) 29.9	(b) 20.5
	066 067	tent, ppm Standard deviation Hydrocarbon content,	6.1 (b)	7.2 (b)	26.8 (b)	1.5 (b)	9.9 (b)	0 (b)	16.3 (b)	12.9 (b)
•	067 068	ppm Standard deviation Hydrocarbon content,	(b) 6.0	(b) 1.4	(b) 3.8	(b) 0.2	(b) 0.9	(b) 6.6	(b) 0.4	(b) 1.4
	068 069	ppm Standard deviation Carbon dioxide content,	3.6 (b)	1.2 (b)	6.2 (b)	0.1 (b)	0.5 (b)	14.1 (b)	0.1 (b)	1.1 (b)
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 76637	(b) 66273	(b) 65590	(b) 210	(b) 97763	(b) 2960	(b) 108410	(b) 88600
	070 071 071 072	ppm Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	10148 (b) (b) 166	29524 (b) (b) 114	26932 (b) (b) 168	13 (b) (b) 11	24341 (b) (b) 264	4087 (b) (b)	47310 (b) (b) 370	59748 (b) (b) 90
	072 073 073 074	Standard deviation Oxygen content, ppm Standard deviation SO _x permissive signal	163 137020 40895 5.0	94 120930 22111 5.0	174 127380 23159 5.0	1 (b) (b) 5.0	185 95193 24938 5.0	1 10548 10181 5.0 0	326 70279 38696 5.0 0	85 110660 73609 5.0
£.was a	074 075	Standard deviation Gas analyzer gas tempera- ture- F	0 167	0 198	0 166	0 104	213	109	213	163

	Scannara action	10140	Z93Z4	20932	13	Z4341	4087	4/310	~~59740
071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	166	114	168	11	264	9	370	90
072	Standard deviation	163	94	174	1	185	1	326	85
073	Oxygen content, ppm	137020	120930	127380	(b)	95193	10548	70279	110660
073	Standard deviation	40895	22111	23159	(b)	24938	10181	38696	73609
074	SO _x permissive signal	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
074	Stândard deviation	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	167	198	166	104	213	109	213	163
075	Standard deviation	54	21	36	8	30	14	33	60
057	Sample gas pressure, psia	20.0	27.7	27.9	19.2	28.0	23.2	28.0	28.3
057	Standard deviation	6.7	2.7	4.8	7.3	3.9	7.3	2.2	3.3
089	Sample line differential temperature, °F	144	146	145	142	150	144	(b)	155
089	Standard deviation	1	1	2	3	8	0	(þ)	1
090	Sample line temperature,	211	220	218	212	237	213	82	84
000	F	0.0	-	c	0	10	1	0	0
090	Standard deviation	23	5	6	0	13	1	9	8
091	Sample line temperature, F	255	259	955	250	260	248	238	82
091	Standard deviation	32	5	208	12	4	11	6	.12
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	°F								
146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
150	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	temperature, F	4. 3	4. 3	4. 3	41.3		/. \	/	/1. \
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
4 - 7	ture, F	/1. \	/ 5 \	763	/ L \	/ L\	()	/h)	(b)
157	Standard deviation	(b)	(b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
159	Sample line wall tempera-	(b)	(b)	(b)	(0)	(b)	(0)	(D)	(0)
1 5 0	ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159 C34	Standard deviation SO _x concentration, ppm	239	133	185	(b)	275	(b)	646	94
C34	Standard deviation	149	91	93	(b)	152	(b)	166	88
C46	NO _x concentration,	0.467	0.863	0.601	(b)	0.499	(b)	0.230	0.187
	Îb/MBtu								
C46	Standard deviation	0.392	1.127	0.381	(b)	0.275	(b)	0.088	0.051
C47	SO _X concentration, lb/MBtu	0.703	0.613	0.789	(b)	0.837	(b)	1.318	0.226
C47	Standard deviation	0.691	0.482	0.549	(b)	0.622	(b)	0.349	0.191
C49	Exhaust sulfur, percent	23.93	20.86	26.85	(b)	28.49	(b)	32.24	5.53
	of input								
C49	Standard deviation	23.52	16.40	18.68	(b)	21.16	(b)	8.54	4.68

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TABLE 4. - Continued.

			_				
	Data	Parameter			Test		
	chan- nel		CAS0	CAS1	CAS2	CAS3	CAS4
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)
	027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
	026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b) (b)	(b) (b)	(b)	(b)
	063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 198	(b) (b)	(b) 238	(b) 166	(b) 262
	064 065	Standard deviation Carbon monoxide con- tent, ppm	133 (b)	(b) (b)	57 (b)	132 (b)	47 (b)
	065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 15.2	(b)	(b) 28.8	(b) 13.3	(b) 10.8
!	066 067	Standard deviation Hydrocarbon content, ppm	6.6 (b)	(b) (b)	40.2 (b)	16.5 (b)	16.4 (b)
	067 068	Standard deviation Hydrocarbon content,	(b) 16.0	(b)	(b) 3.5	(b) 1.8	(b) 1.0
	068 069	ppm Standard deviation Carbon dioxide content,	71.8 (b)	(b)	6.7 (b)	2.0 (b)	0.8 (b)
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 64568	(b) (b)	(b) 92473	(b) 45592	(b) 71153
	070 071 071	ppm Standard deviation Sulfur oxide content, ppm Standard deviation	27295 (b) (b)	(b) (b) (b)	23623 (b) (b)	37860 (b) (b)	16033 (b) (b)
	072 072 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm	`33 104 104420	3 0 (b)	128 148 101980	`88 123 143500	56 79 135610
	073 074 074	Standard deviation SO _X permissive signal Standard deviation	38196 5.0 0	(b) 5.0 0	26840 4.9 0	46239 5.0 0	21861 4.9 0
	075	Gas analyzer gas tempera- ture, F	233	98	212	231	250

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070 071	Standard deviation	27295	(b)	23623	37860	16033
	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	_33	3	128	88	56
072	Standard deviation	104	0	148	123	79
073	Oxygen content, ppm	104420	(b)	101980	143500	135610
073	Standard deviation	38196	(b)	26840	46239	21861
074	SO _x permissive signal	5.0	š. Ó	4.9	5.0	4.9
074	Standard deviation	0	0	0	0	0
075	Gas analyzer gas tempera-	233	98	212	231	250
	ture, F			212	251	230
075	Standard deviation	38	13	27	42	29
057	Sample gas pressure,	30.9	14.4	29.0	34.4	29.6
	psia					
057	Standard deviation	0.4	2.5	2.6	8.6	5.7
089	Sample line differential	131	162	158	111	(b)
	temperature, °F					
089	Standard deviation	2 87	15	1	23	(b)
090	Sample line temperature,	87	98	92	87	99
090	F Standard deviation	9	16	7	12	18
090		194	92			
091	Sample line temperature,	194	92	193	153	209
001	t Ctandard doviation	27	11	32	54	18
091	Standard deviation					
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)
1.46	°F Standard deviation	(b)	(b)	(b)	(b)	(b)
146		(b)	(b)	(b) (b)	(b) (b)	(b)
150	Sample line differential temperature, F	(6)	(0)	(1)	(0)	(5)
150	Standard deviation	(b)	(b)	(b)	(b)	(b)
157		(b)	(b)	(b)	(b)	(b)
137	Sample port gas tempera- ture, °F	(0)	(0)	(0)	(0)	(5)
157	Standard deviation	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera-	(b)	(b)	(b)	(b)	(b)
133	ture, °F	(5)	(5)	(5)	(5)	(-)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)
C34	SO_{x} concentration, ppm	(b)	(b)	(b)	(b)	(b)
	Standard deviation	(b)	(b)	(b)	(b)	(b)
C34						
C46	NO _x concentration, lb/MBtu	0.396	(b)	0.511	0.452	0.823
C46	Standard deviation	0.267	(b)	0.478	0.660	1.328
C47	SO_{x} concentration,	0.075	(b)	0.436	0.441	0.315
U 4 7	Tb/MBtu	0.075	(6)	0.450	0.171	0.010
C47	Standard deviation	0.251	(b)	0.803	0.661	0.802
C49	Exhaust sulfur, percent	2.61	(b)	15.17	15.34	10.95
- · -	of input		` '			
C49	Standard deviation	8.75	(b)	27.92	22.97	27.91
		•	` '			



TABLE 4. - Continued.

	Data	Parameter				Tes	t			
	chan- nel		L1	L2	L3	L4	L5	L6	M1	M2
	027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(p)
	027 026	Standard deviation Sample gas pressure, psia	(b)	(b)	(b) (b)	(b)	(b)	(b)	(b) (b)	(b)
	026 063	Standard deviation Nitrogen oxides con-	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
	063 064	tent, ppm Standard deviation Nitrogen oxides con-	(b) 121	(b) 23	(b) 144	(b) 203	(b) 166	(b) (b)	(b) 128	(b) 149
	064 065	tent, ppm Standard deviation Carbon monoxide con-	16 (b)	9 (b)	15 (b)	11 (b)	21 (b)	(b)	11 (b)	21 (b)
	065 066	tent, ppm Standard deviation Carbon monoxide con-	(b) 54	(b) 112	(b) 31	(b) 18	(b) 15	(b) (b)	(b) 43	(b) 8
!	066 067	tent, ppm Standard deviation Hydrocarbon content,	37 (b)	28 (b)	5 (b)	4 (b)	4 (b)	(b) (b)	6 (b)	5 (b)
•	067 068	ppm Standard deviation Hydrocarbon content,	(b) 5.9	(b) 1.6	(b) 1.4	(b) 1.2	(b) 0.6	(b)	(b) 2.7	(b) 0.9
	068 069	ppm Standard deviation Carbon dioxide content,	11.4 (b)	0.3 (b)	0.5 (b)	(b)	0.7 (b)	(b)	0.2 (b)	0.2 (b)
	069 070	ppm Standard deviation Carbon dioxide content,	(b) 110270	(b) 154100	(b) 144980	(b) 115170	(b) 110442	(b)	(b) 64483	(b) 65970
	070 071	ppm Standard deviation Sulfur oxide content, ppm	17446 (b)	3789 (b)	3291 (b)	2129 (b)	6295 (b)	(b)	2289 (b)	9446 (b)
	071 072 072	Standard deviation Sulfur oxide content, ppm Standard deviation	(b) 329 173	(b) 1329 343	(b) 689 280	(b) 378 85	(b) 274 106	(b) 268 212	(b) 158 93	(b) 253 145
	073 073 074	Oxygen content, ppm Standard deviation SO _X permissive signal	80224 20962 4.9	22805 3584 7.7	40869 3483 7.5	76760 5106 4.9	82111 7544 4.9	(b) (b) 7.4	136510 5002 4.9	135880 12215 4.9
siaidus st	074 075	Standard deviation Gas analyzer gas tempera—	0 228	2.5 209	2.5 252	0 204	0 130	2.5 190	0 252	0 220

, well, and secure control of	the anti-market bearings and the same and th								
070 071 071 072 072 073 073 074 074 075	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal Standard deviation Gas analyzer gas tempera—	17446 (b) (b) 329 173 80224 20962 4.9 0	3789 (b) (b) 1329 343 22805 3584 7.7 2.5 209	3291 (b) (b) 689 280 40869 3483 7.5 2.5 252	2129 (b) (b) 378 85 76760 5106 4.9 0	6295 (b) (b) 274 106 82111 7544 4.9 0 130	(b) (b) 268 212 (b) (b) 7.4 2.5 190	2289 (b) (b) 158 93 136510 5002 4.9 0 252	9446 (b) (b) 253 145 135880 12215 4.9 0
075 057	ture, F Standard deviation Sample gas pressure,	15 26.2	28 26.8	9 26.6	54 22.7	8 22.8	8 19.6	7 26.2	4 26.9
057 089	psia Standard deviation Sample line differential	0.3 (b)	0.2 (b)	0.1 (b)	3.7 (b)	5.0 (b)	0.1 (b)	0.3 (b)	0.1 (b)
089 090	temperature, F Standard deviation Sample line temperature,	(b) 87	(b) 91	(b) 99	(b) 113	(b) 92	(b) 83	(b) 102	(b) 80
 090 091	Standard deviation Sample line temperature, *F	11 213	2 215	4 224	4 221	17 199	2 193	4 163	3 152
091 146	Standard deviation Sample line temperature, °F	6 (b)	9 (b)	(p)	8 (b)	10 (b)	2 (b)	4 (b)	(p)
146 150	Standard deviation Sample line differential temperature, °F	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b) (b)
150 157	Standard deviation Sample port gas tempera- ture, F	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)	(b)
157 159	Standard deviation Sample line wall tempera— ture, F	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b)
159 C34 C34 C46	Standard deviation SO _X concentration, ppm Standard deviation NO _X concentration,	(b) 290 135 0.222	(b) 1200 264 0.026	(b) 658 311 0.190	(b) 408 68 0.355	(b) 315 90 0.295	(b) (b) (b) 0.225	(b) 158 93 0.408	(b) 253 145 0.379
C46 C47	Tb/MBtu Standard deviation SO _X concentration, 1b/MBtu	0.031 0.728	0.011 1.839	0.031 1.175	0.035 0.932	0.030 0.690	0.019 0.406	0.080 0.689	0.073 0.899
C47 C49	Standard deviation Exhaust sulfur, percent of input	0.323 17.81	0.567 44.98	0.523 28.75	0.218 22.81	0.229 16.88	0.252 9.93	0.394 16.85	0.483 22.00
C49	Standard deviation	7.90	13.88	12.78	5.34	5.60	6.18	9.63	11.82



TABLE 4. - Continued.

Data	Parameter					Test				
chan- nel		M3	M4	M5	M6	M7	M8	M9	M11	M12
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b)	(b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 185	(b) 194	(b) 192	(b) 180	(b) 159	(b) 159	(b) 160	(b) 202	(b) 201
064 065	Standard deviation Carbon monoxide con- tent, ppm	9 (b)	6 (b)	5 (b)	3 (b)	11 (b)	8 (b)	6 (b)	8 (b)	4 (b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 7.6	(b) 7.0	(b) 8.3	(b) 7.4	(b) 11.9	(b) 32.2	(b) 19.6	(b) 8.5	(b) 10.1
066 067	Standard deviation Hydrocarbon content, ppm	0.6 (b)	0.8 (b)	1.0 (b)	0.5 (b)	3.2 (b)	20.6 (b)	5.5 (b)	0.8 (b)	2.3 (b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) 0.5	(b) 0.9	(b) 1.8	(b) 0.5	(b) 0.7	(b) 8.1	(b) 1.7	(b) 1.5	(b) 1.6
068 069	Standard deviation Carbon dioxide content, ppm	0.2 (b)	0.2 (b)	0.7 (b)	0.1 (b)	0.1 (b)	12.4 (b)	0.4 (b)	0.3 (b)	1.0 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 75034	(b) 75197	(b) 76385	(b) 73451	(b) 64614	(b) 64278	(b) 66491	(b) 76072	(b) 76083
070 071 071	Standard deviation Sulfur oxide content, ppm Standard deviation	3527 (b) (b)	2499 (b) (b)	3221 (b) (b)	2725 (b) (b)	4299 (b) (b)	5226 (b) (b)	6581 (b) (b)	4181 (b) (b) 400	2445 (b) (b) 432
072 072 073 073	Sulfur oxide content, ppm Standard deviation Oxygen content, ppm Standard deviation	511 123 124090 3812	536 140 124210 3575	651 96 124450 2996	466 93 125900 6447	319 55 140410 2590	446 88 141490 6615	380 101 145060 10256	97 131100 7179	106 124730 5669
074 074 075	SO _X permissive signal Standard deviation Gas analyzer gas tempera— ture. F	4.9 0 235	4.9 0 254	4.9 0 265	4.9 0 243	4.9 0 235	4.9 0 262	4.9 0 278	4.9 0 264	4.9 0 226

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070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	3527 (b) (b) 511	2499 (b) (b) 536	3221 (b) (b) 651	2725 (b) (b) 466	4299 (b) (b) 319	5226 (b) (b) 446	6581 (b) (b) 380	4181 (b) (b) 400	2445 (b) (b) 432
072	Standard deviation	123	140	96	93	55	88	101	97	106
073	Oxygen content, ppm	124090	124210	124450	125900	140410	141490	145060	131100	124730
073	Standard deviation	3812	3575	2996	6447	2590	6615	10256	7179	5669
074	SO _X permissive signal	4.9	4.9	4.9	4.9	4.9	4.9 0	4.9 0	4.9 0	4.9 0
074	Standard deviation	0	0	0	0	0 235	262	278	264	226
075	Gas analyzer gas tempera- ture, F	235	254	265	243					
075	Standard deviation	3	10	3	4	10	27	4	3	27
057	Sample gas pressure, psia	26.6	26.3	27.3	28.3	28.6	30.2	31.0	30.6	28.2
057	Standard deviation	0.1	3.2	0.2	0.2	0.3	1.6	0.5	1.2	1.8
089	Sample line differential temperature, °F	(b)								
089	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(þ)	(b)	(b) 94
090	Sample line temperature, F	86	95	106	90	`83	81	`95	`96	94
090	Standard deviation	2	3	3	6	1	2	3	0	1
091	Sample line temperature, °F	160	151	159	149	163	152	151	155	140
091	Standard deviation	1	4	3	3	18	16	3	. 1	. 3
146	Sample line temperature, °F	(b)								
146	Standard deviation	(b)								
150	Sample line differential temperature, F	(b)								
150	Standard deviation	(b)								
157	Sample port gas tempera- ture, °F	(b)								
157	Standard deviation	(b)								
159	Sample line wall tempera- ture, °F	(b)								
159	Standard deviation	(b)								
C34	SO_X concentration, ppm	510	545	651	466	319	446	380	400	432
C34	Standard deviation	123	144	96	93	55	88	101	97	106
046	NO _X concentration, lb/MBtu	0.472	0.492	0.470	0.440	0.435	0.533	0.723	0.481	0.509
C46	Standard deviation	0.044	0.071	0.059	0.025	0.067	0.152	0.908	0.062	0.055
C47	SO _X concentration, Ib/MBtu	1.798	1.867	2.232	1.601	1.203	2.163	2.678	1.332	1.534
C47	Standard deviation	0.421	0.363	0.457	0.366	0.246	0.986	4.271	0.384	0.461
C49	Exhaust sulfur, percent of input	43.99	45.68	54.61	39.18	29.42	52.91	65.51	32.59	37.53
C49	Standard deviation	10.31	8.87	11.17	8.95	6.03	24.13	104.5	9.40	11.28

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TABLE 4. - Continued.

Data	Parameter					Test			
chan- nel		N1	N2	N5A	N5B	N6	N55A	N55B	N7
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b) (b)	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b)	(b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 265	(b) 235	(b) 245	(b) 254	(b) 234	(b) 270	(b) 252	(b) 238
064 065	Standard deviation Carbon monoxide con- tent, ppm	40 (b)	13 (b)	78 (b)	13 (b)	16 (b)	9 (b)	13 (b)	19 (b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 42.2	(b) 6.4	(b) 5.9	(b) 1.5	(b) 2.0	(b) 7.6	(b) 6.6	(b) 5.9
066 067	Standard deviation Hydrocarbon content, ppm	49.0 (b)	2.2 (b)	4.8 (b)	0.9 (b)	1.7 (b)	1.6 (b)	0.8 (b)	1.8 (b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) 2.2	(b) 0.2	(b) 4.5	(b) 0.8	(b) 0.4	(b) 0.6	(b) 0.2	(b) 0.9
068 069	Standard deviation Carbon dioxide content, ppm	3.2 (b)	0.1 (b)	9.4 (b)	0.1 (b)	0.2 (b)	0.2 (b)	0.1 (b)	0.4 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 85663	(b) 73871	(b) 71327	(b) 74586	(b) 72662	(b) 79226	(b) 78283	(b) 64569
070 071 071 072	Standard deviation Sulfur oxide content, ppm Standard deviation Sulfur oxide content, ppm	18389 (b) (b) 244	20638 (b) (b) 214	22837 (b) (b) 225	3851 (b) (b) 222	3924 (b) (b) 158	4454 (b) (b) 273	3163 (b) (b) 258	21644 (b) (b) 76
072 073 073 074	Standard deviation Oxygen content, ppm Standard deviation SO _X permissive signal	169 120370 19249 5.0	128 122160 36000 5.0	110 129760 31117 5.0	34 124570 4523 5.0	143 131960 6373 5.0	55 122980 6069 4.9	46 128200 3444 4.9	112 133680 8872 4.9
074 075	Standard deviation Gas analyzer gas tempera-	0 253	0 241	0 240	0 251	0 241	0 241	0 252	0 227

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-070	Standard deviation	18389	20638	22837	3851	3924	4454	3153	21644
071	Sulfur oxide content, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
071	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
072	Sulfur oxide content, ppm	244	214	225	222	158	273	258	76
072	Standard deviation	169	128	110	34	143	55	46	112
073	Oxygen content, ppm	120370	122160	129760	124570	131960	122980	128200	133680
073	Standard deviation	19249	36000	31117	4523	6373	6069	3444	8872
074	SO _x permissive signal	5.0	5.0	5.0	5.0	5.0	4.9	4.9	4.9
074	Standard deviation	0	0	0	0	0	0	0	0
075	Gas analyzer gas tempera- ture, F	253	241	240	251	241	241	252	227
075	Standard deviation	21	2	20	4	4	20	1	8
057	Sample gas pressure, psia	28.2	29.2	27.9	28.8	28.6	28.6	28.7	29.0
057	Standard deviation	0.4	0.1	3.2	0.1	0.2	0.2	0	0.1
089	Sample line differential temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
089	Standard deviation	(b)	(b)	(b)	(b)	(þ)	(b)	(b)	(b)
090	Sample line temperature,	`80	`69	`85	`92	`93	`85	`89	(b) 79
090	F Standard deviation	7	2	7	1	2	7	1	3
091	Sample line temperature,	214	195	206	199	220	202	219	215
001	F	,		200	200	220	202		
091	Standard deviation	15	9	13	6	6	28	1	2
146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	°F						4. 3	4. 3	
146	Standard deviation	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)	(b)	(b) (b)
150	Sample line differential	(b)	(b)	(b)	(p)	(p)	(p)	(b)	(p)
1.50	temperature, F	/ L\	/ ៤ \	/ L \	/ ៤ \	(L)	/ L \	(L)	/b)
150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Sample port gas tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	ture, F Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
159	Sample line wall tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
135	ture, F	(0)	(6)	(5)	(5)	(6)	(5)	(5)	(5)
159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
C34	SO _x concentration, ppm	244	198	244	222	158	273	258	83
C34	Standard deviation	169	46	95	34	143	55	46	115
C46	NO _x concentration,	0.735	0.652	0.610	0.680	0.619	0.706	0.674	0.568
	îb/MBtu								
C46	Standard deviation	0.232	0.092	0.277	0.093	0.110	0.051	0.043	0.079
C47	SO _X concentration,	0.954	0.765	0.854	0.828	0.544	0.999	0.966	0.272
	Tb/MBtu				0.150	0.000	0.010	0.104	0 000
C47	Standard deviation	0.589	0.189	0.457	0.156	0.363	0.210	0.194	0.383
C49	Exhaust sulfur, percent of input	33.17	26.60	29.68	28.80	18.90	34.73	33.58	9.47
C49	Standard deviation	20.47	6.57	15.88	5.42	12.62	7.32	6.76	13.32



TABLE 4. - Continued.

Data	Parameter				Test			
chan- nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2
027	Sample gas temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
027 026	Standard deviation Sample gas pressure, psia	(b)	(b) (b)	(b)	(b) (b)	(b)	(b)	(b) (b)
026 063	Standard deviation Nitrogen oxides con- tent, ppm	(b)	(b)	(b)	(b)	(b)	(b)	(b)
063 064	Standard deviation Nitrogen oxides con- tent, ppm	(b) 174	(b) 243	(b) 266	(b) 242	(b) 248	(b) 209	(b)
064 065	Standard deviation Carbon monoxide con- tent, ppm	39 (b)	99 (b)	34 (b)	31 (b)	52 (b)	17 (b)	(b)
065 066	Standard deviation Carbon monoxide con- tent, ppm	(b) 27.0	(b) 11.4	(b) 16.0	(b) 9.7	(b) 10.6	(b) 2.8	(b) 35.3
066 067	Standard deviation Hydrocarbon content, ppm	19.7 (b)	8.1 (b)	11.4 (b)	5.9 (b)	18.6 (b)	1.8 (b)	0 (b)
067 068	Standard deviation Hydrocarbon content, ppm	(b) 683	(b) 6.8	(b) 1.2	(b) 28.9	(b) 1.6	(b) 0.7	(b) 8.1
068 069	Standard deviation Carbon dioxide content, ppm	1518 (b)	9.7 (b)	1.0 (b)	59.1 (b)	3.9 (b)	0.8 (b)	10.9 (b)
069 070	Standard deviation Carbon dioxide content, ppm	(b) 52516	(b) 66274	(b) 75831	(b) 73348	(b) 73028	(b) 50497	(b) 10876
070 071	Standard deviation Sulfur oxide content, ppm	37015 (b)	21966 (b)	10785 (b)	9544 (b)	14846 (b)	32860 (b)	0 (b)
071 072 072	Standard deviation Sulfur oxide content, ppm Standard deviation	(b) 22 27	(b) 40 111	(b) 231 87	(b) 288 115	(b) 306 122	(b) 292 108	(b) 212 103
073 073	Oxygen content, ppm Standard deviation	108940 36925	118090 28716	126330 9491	129710 10359	122460 16031	84322 57599	39189 64522
074 074 075	SO _X permissive signal Standard deviation Gas analyzer gas tempera—	4.9 0 133	4.9 0 246	5.0 0 242	4.9 0 263	5.0 0 260	5.0 0 254	5.0 0 230

intian siise and	ስ ፖ ስ	Standard deviation	37015	21966	10785	9544	14846	32860	0
	070			(p)	10765 (b)	9544 (b)	(b)	(b)	(b)
	071	Sulfur oxide content, ppm	(b)		(b)	(b)	(b)	(b)	(b)
	071 072	Standard deviation	(b) 22	(b) 40	231	288	306	292	212
		Sulfur oxide content, ppm	27	111	87	115	122	108	103
	072	Standard deviation						84322	39189
	073	Oxygen content, ppm	108940	118090	126330	129710	122460		
	073	Standard deviation	36925	28716	9491	10359	16031	57599	64522
	074	SO _X permissive signal	4.9	4.9	5.0	4.9	5.0	5.0	5.0
	074	Standard deviation	0	0	0	0	0	0	0
	075	Gas analyzer gas tempera- ture, F	133	246	242	263	260	254	230
	075	Standard deviation	42	9	14	17	30	49	31
	057	Sample gas pressure, psia	17.2	27.9	25.7	25.5	22.8	19.5	17.8
	057	Standard deviation	4.8	0.2	1.4	3.1	4.1	3.4	2.2
	089	Sample line differential	159	(b)	(b)	(b)	99	(b)	(b)
	009	temperature, F	105	(6)	(5)	(5)		(~)	(-,
	089	Standard deviation	16	(b)	(h)	(b)	53	(Þ)	(þ)
	090	Sample line temperature,	84	`91	(b) 103	`91	95	105	106
		°F							
	090	Standard deviation	12	7	8	8	9	11	8
	091	Sample line temperature,	140	219	214	209	203	200	168
		°F							
	091	Standard deviation	39	5	6	10	22	9	13
	146	Sample line temperature,	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		°F							, ,
	146	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	150	Sample line differential	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		temperature, F					4		
	150	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
	157	Sample port gas tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, F	4.)	(1.)	41.3	4. \	/1.3	/1.	/ . \
	157	Standard deviation	(b)	(b)	(b)	(p)	(b)	(b)	(b)
	159	Sample line wall tempera-	(b)	(b)	(b)	(b)	(b)	(b)	(b)
		ture, F	(.)	(1.)	/1. \	/1. \	(1.)	(1.)	71.3
	159	Standard deviation	(b)	(b)	(b)	(b)	(b)	(b)	(b)
(±)	C34	SO_X concentration, ppm	86	40	234	300	320	323	833
	C34	Stândard deviation	47	120	84	102	93	107	0 700
OLDOUT: FRAME	C46	NO _X concentration, lb/MBtu	0.526	0.649	0.722	0.682	0.719	0.703	0.786
Ğ	C46	Standard deviation	0.435	0.219	0.129	0.103	0.194	0.187	0.286
	C47	SO_{x} concentration,	0.081	0.151	0.868	1.168	1.289	1.176	0.836
FR		Îb/MBtu							
B	C47	Standard deviation	0.113	0.447	0.291	0.395	0.377	0.409	0.409
A	C49	Exhaust sulfur, percent	2.81	5.26	30.20	40.63	44.81	40.90	29.08
		of input							
7	C49	Standard deviation	3.94	15.53	10.12	13.72	13.13	14.19	14.22

2 46 73 236

Table 4. - Continued.

(i) PFB test unit data

Data	Parameter					Test				
chan- nel		A1A	A2A	A11A	A10A	A9A	A9B	A1B	A10B	A11B
051	Sample 1 temperature,	(b)	(b)							
051 052	Standard deviation Sample 2 temperature,	(b) (b)	(b)							
052	Standard deviation Sample gas pressure, psia	(b)	(b)							
150		(a)	(a)							
150	Standard deviation Sample rotation, rpm Standard deviation Sample coolant tempera- ture, °F	(b)	(b)							
151		5.5	5.5	5.4	5.0	5.1	5.7	5.7	5.4	5.3
151		0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.1	0.2
152		80	73	67	61	63	77	67	56	57
152 153	Standard deviation Sample coolant tempera- ture, °F	0 56	7 66	8 66	0 53	6 63	1 163	10 208	1 205	0 213
153	Standard deviation Sample coolant tempera- ture, °F	1	3	5	2	3	20	6	5	2
154		56	66	66	53	63	160	214	217	226
154	Standard deviation Sample coolant tempera- ture, °F	1	3	5	2	3	26	8	4	2
155		56	65	66	53	63	(b)	(b)	(b)	(b)
155	Standard deviation Sample exit gas tempera- ture, °F	1	3	5	2	3	(b)	(b)	(b)	(b)
157		(a)	(a)							
157	Standard deviation Sample inlet gas tempera- ture, °F	(b)	(b)							
158		1206	1155	1211	1270	1286	1194	1250	1245	1282
158	Standard deviation	25	36	10	35	10	36	56	23	7

24074 237)

Table 4. - Continued.

(i) Continued. PFB test unit data

Data chan-	Parameter	Test								
nel		TB1A	TB1B	TB1C	TB1D	TB1E	TB1F	TB1G	ТВ1Н	
051	Sample 1 temperature, °F	(b)	(b)	(b)	1934	(b)	(b)	(b)	156	
051 052	Standard deviation Sample 2 temperature, °F	(b)	(b)	(b)	2341 1938	(b)	(b)	(b)	11 337	
052 150	Standard deviation Sample gas pressure, psia	(b) (b)	(b) (b)	(b)	2339 (b)	(b) (b)	(b) (b)	(b)	704 (b)	
150	Standard deviation Sample rotation, rpm Standard deviation Sample coolant temperature, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
151		22.2	29.2	27.8	28.0	28.0	26.6	27.8	27.3	
151		10.2	0.6	3.0	0.1	0.1	4.9	0.2	7.1	
152		83	86	88	85	82	83	92	94	
152	Standard deviation Sample coolant temperature, °F	6	5	2	1	1	6	2	6	
153		78	80	81	75	72	73	81	83	
153	Standard deviation Sample coolant tempera- ture, F	4	3	1	2	1	4	2	3	
154		84	88	90	88	86	86	95	95	
154	Standard deviation Sample coolant tempera- ture, °F	8	5	3	1	1	6	2	7	
155		76	78	79	72	70	73	80	223	
155	Standard deviation Sample exit gas tempera- ture, °F	2	2	1	1	1	4	1	43	
157		(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
157	Standard deviation Sample inlet gas tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	
158		838	1129	1232	1341	1394	1342	1254	1179	
158	Standard deviation	538	367	168	66	26	306	13	367	

240 3 238

Table 4. - Continued.

(i) Continued. PFB test unit data

Data chan-	Parameter				Test			
nel		TB2A	TB2B	TB2C	TB2D	TB2E	TB2F	TB2F
051	Sample 1 temperature,	(b)	1403	1384	(b)	(b)	1385	1435
051 052	Standard deviation Sample 2 temperature, °F	(b) (b)	26 8961	20 9223	(b) (b)	(b)	44 1389	15 1434
052 150	Standard deviation Sample gas pressure, psia	(b)	2857 (b)	2458 (b)	(b) (b)	(b) (b)	42 (b)	14 (b)
150	Standard deviation Sample rotation, rpm Standard deviation Sample coolant tempera- ture, °F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
151		28.7	28.9	28.8	28.8	28.8	29.0	29.3
151		0.2	0.1	0.1	0.2	0.1	0.1	0.1
152		88	87	89	81	85	87	90
152	Standard deviation Sample coolant tempera- ture, °F	1	3	3	3	3	2	1
153		94	95	99	74	83	210	248
153	Standard deviation Sample coolant tempera- ture, F	7	4	5	4	2	21	7
154		89	88	89	83	88	88	91
154	Standard deviation Sample coolant tempera- ture, F	1	3	3	4	3	2	1
155		262	271	274	225	253	252	279
155	Standard deviation Sample exit gas tempera- ture, °F	5	11	5	21	4	23	6
157		(b)	(b)	(b)	(b)	(b)	(b)	(b)
157	Standard deviation Sample inlet gas temperature, F	(b)	(b)	(b)	(b)	(b)	(b)	(b)
158		1454	1509	1493	1473	1438	1392	1438
158	Standard deviation	10	5	10	21	24	44	19

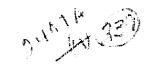


Table 4. - Continued.

(i) Continued. PFB test unit data

	(1) 0	ont muea.	Pro le	St unit	uata				
Data	Parameter				T	est			
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
152	Sample coolant tempera- ture, °F	92	80	81	82	79	74	70	77
152 153	Standard deviation Sample coolant tempera- ture, F	13 84	5 81	7 81	4 84	5 81	1 70	3 71	5 76
153 154	Standard deviation Sample coolant tempera- ture, F	8 83	6 81	10 81	3 83	7 · 80	1 70	6 71	5 75
154 155	Standard deviation Sample coolant tempera- ture, F	8 83	6 81	10 80	3 83	7 80	1 70	6 71	5 75
155 157	Standard deviation Sample exit gas temperature, F	8 132	6 142	10 111	3 103	7 148	1 89	6 65	5 67
157 158	Standard deviation Sample inlet gas temperature, F	22 (b)	23 (b)	20 (b)	15 (b)	42 (b)	10 (b)	4 (b)	7 (b)
158 145	Standard deviation Turbine stator gas temperature, F	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
145 146	Standard deviation Turbine exit gas pres- sure, psia	(b)	(b)	(b)	(b) (b)	(b)	(b)	(b) (b)	(b) (b)
146 119	Standard deviation Turbine inlet gas wall temperature, F	(b)	(b)	(b) (b)	(b) (b)	(b) 726	(b) 331	(b) 762	(b) 179
119 155	Standard deviation Turbine exit gas temperature, °F	(b)	(b)	(b)	(b) (b)	291 (b)	324 (b)	409 (b)	1 (b)
155 158	Standard deviation Sample 1 temperature,	(b) 72	(b) 70	(b) 69	(b) 72	(b) 69	(b) 57	(b) 61	(b) 65
158 159 159 167	Standard deviation Sample 2 temperature, °F Standard deviation Turbine inlet gas tem-	9 70 9 69	7 68 7 907	11 68 11 685	4 71 4 1112	8 67 8 1049	2 55 2 419	6 59 6 1071	5 63 5 1019
167 168	perature, °F Standard deviation Turbine inlet gas tem- perature, °F	0 109	541 877	566 681	354 1102	462 1043	493 413	581 1049	615 992
 168	Standard deviation	9.1	521	562	354	460	482	580	600

158	Sample 1 temperature,	72	70	69	72	69	57	61	65
158 159 159 167	Standard deviation Sample 2 temperature, °F Standard deviation Turbine inlet gas tem-	9 70 9 69	7 68 7 907	11 68 11 685	4 71 4 1112	8 67 8 1049	2 55 2 419	6 59 6 1071	5 63 5 1019
167 168	perature, °F Standard deviation Turbine inlet gas tem-	0 109	541 877	566 681	354 1102	462 1043	493 413	581 1049	615 992
168 169	perature, °F Standard deviation Turbine body wall tem- perature, °F	9.1 128	521 182	562 197	354 230	460 218	482 156	580 188	600 112
169 170	Standard deviation Turbine blade tempera- ture, F	5.1 1150	26 1192	45 1153	28 1223	35 1242	19 1119	24 1297	6 1042
170 172	Standard deviation Turbine coolant exit temperature, °F	115 84	99 82	149 78	69 82	144 78	125 73	58 75	61 79
172 177	Standard deviation Turbine inlet gas pres- sure, psia	7.6 14.2	4.5 69.6	4.8 65.1	2.8 70.6	4.8 69.6	2.4 53.6	4.4 70.1	4.9 65.8
177 178	Standard deviation Turbine inside pressure, psia	0.2 13.5	17.1 55.0	18.9 52.4	16.3 53.1	12.1 52.4	20.7 49.3	9.8 39.4	18.5 46.4
178 179	Standard deviation Turbine exit gas pres- sure, psia	0.8 13.6	11.6 44.4	14.4 48.3	9.5 40.6	7.6 42.3	16.1 45.9	22 . 5 48 . 4	9.5 40.6
179 181	Standard deviation Turbine case pressure, psia	0.5 14.6	13.1 25.6	16.4 41.4	8.6 41.5	8.9 5.1	15.9 4.9	17.7 5.5	9.8 5.1
181 182 182 183	Standard deviation Turbine oil flow, gpm Standard deviation Turbine bearing 1 tem- perature, °F	0.2 0.04 0.05 123	13.3 0.31 0.12 147	0.1 0.26 0.14 130	0.3 0.38 0.08 162	0.5 0.39 0.13 156	0.7 0.20 0.12 104	0.6 0.48 0.16 208	0.5 0.45 0.17 160
183 184	Standard deviation Turbine bearing 2 temperature, °F	11 122	39 151	43 132	25 167	33 162	31 111	70 167	57 141
184 185	Standard deviation Turbine bearing tempera- ture, F	12 135	41 162	45 138	27 178	36 168	41 116	48 148	45 143
185 186	Standard deviation Turbine bearing tempera- ture, °F	11 109	51 152	54 131	32 164	42 152	53 106	47 149	51 146
186	Standard deviation	14	43	46	27	33	38	46	51

FOLDOUT FRAME

Table 4. - Continued.

(i) Continued. PFB test unit data

Data	Parameter	Test							
chan- nel		ТЗА	ТЗВ	T3C	T3D	T3E	T3F	T4	T5
187	Turbine journal bearing temperature, °F	72	185	161	202	189	121	126	120
187	Standard deviation	24	61	60	40	50	56	33	33
188	Turbine journal bearing temperature, °F	69	176	149	196	187	106	123	119
188	Standard deviation	0	59	63	38	51	43	31	32
189	Turbine oil exit tempera- ture, °F	88	150	130	166	162	103	139	129
189	Standard deviation	8	43	46	27	38	37	38	39
190	Turbine oil in tempera- ture, °F	89	87	83	91	89	76	84	84
190	Standard deviation	9	6	7	4	6	4	7	6
191	Turbine brake air tem- perature, °F	88	84	82	80	82	70	61	55
191	Standard deviation	8	8	9	8	11	4	12	16
192	Turbine brake air pres- sure, psia	14.0	124.2	127.1	127.8	126.5	124.8	125.6	127.6
192	Standard deviation	0	7.1	3.0	2.2	4.6	6.7	5.0	5.0
193	Turbine brake air pres- sure differential, psid	(b)	1.73	1.11	1.82	1.42	0.68	2.45	2.16
193	Standard deviation	(b)	1.23	0.92	0.83	0.74	0.78	1.73	1.37
194	Turbine housing gas pres- sure differential, psid	(b)	15.9	14.8	17.0	14.9	15.3	16.1	16.6
194	Standard deviation	(b)	4.8	5.0	2.3	3.4	5.0	6.2	3.1
195	Turbine rotation 1, rpm	(b)	28129	20985	34284	32092	12071	24511	26114
195	Standard deviation	(b)	16914	18558	12674	15019	15267	17002	17000
196	Turbine rotation 2, rpm	(b)	27633	20635	33688	31476	11836	25014	27043
196	Standard deviation	(b)	16622	18256	12472	14753	14991	17329	17575
197	Turbine acceleration value	(b)	0.022	0.015	0.017	0.012	0.006	0.011	0.009
197	Standard deviation	(b)	0.007	0.007	0.006	0.005	0.006	0.004	0.003
198	Turbine acceleration value	0.007	0.081	0.098	0.097	0.048	0.007	0.015	0.046
198	Standard deviation	0.009	0.006	0.007	0.007	0.037	0.007	0.007	0.026
199	Turbine purge gas tem- perature, °F	161	93	88	93	96	74	96	77
199	Standard deviation	15	11	13	5	12	5	18	11

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Table 4. - Continued.

(i) Continued. PFB test unit data

	Data	Parameter	Test							
	chan- nel		T6A	T6B	T7A	T7B	T7C	T7D1	T7D2	
	152	Sample coolant tempera- ture, °F	(b)							
	152	Standard deviation	(b)							
1	153	Sample coolant tempera- ture, °F	68	77	92	75	80	90	89	
)	153	Standard deviation	12	5	8	7	8	10	9	
	154	Sample coolant tempera- ture, F	68	76	91	75	80	89	88	
1	154	Standard deviation	12	5	8	8	8	10	9	
	155	Sample coolant tempera- ture, °F	(b)							
į	155	Standard deviation	(b)							
	157	Sample exit gas tempera- ture, °F	76	67	85	64	72	78	76	
	157	Standard deviation	4	5	8	9	10	11	10	
	158	Sample inlet gas tempera- ture, °F	(b)							
	158	Standard deviation	(b)							
	145	Turbine stator gas pressure, psia	32.9	51.6	39.5	41.4	43.5	42.4	42.0	
	145	Standard deviation	11.3	9.1	9.8	14.6	11.8	8.8	4.3	
	146	Turbine exit gas pres- sure, psia	22.5	54.8	27.4	30.8	28.3	26.8	24.4	
	146	Standard deviation	8.4	7.1	9.1	12.8	12.0	9.2	3.8	
	119	Turbine inlet gas wall temperature, °F	825	823	878	839	830	872	888	
	119	Standard deviation	149	208	75	107	164	140	30	
	155	Turbine exit gas tempera- ture, °F	1091	591	1078	1045	1037	1060	1107	
	155	Standard deviation	347	617	83	131	203	161	31	
	158	Sample 1 temperature,	57	65	87	65	71	81	79	
	158	Standard deviation	13	6	10	10	10	12	15	
	159	Sample 2 temperature, °F	55	63	85	62	68	79	77	
	159	Standard deviation	13	6	10	10	10	12	13	
	167	Turbine inlet gas tem- perature, °F	1378	1314	1412	1363	1263	1289	1352	
	167	Standard deviation	243	325	118	181	263	193	46	
	168	Turbine inlet gas tem- perature, °F	1323	1279	1395	1358	1095	1351	1443	
	168	Standard deviation	234	321	120	181	223	198	59	
listn.	169	Turbine body wall tem-	101	87	61	98	96	63	73	

FOLDOUT FRAME

Sample 1 temperature,	5/	65	87	65	/1	81	\(\)
r Standard deviation	13	6	10	10	10	12	1
Sample 2 temperature, F							7
Standard deviation							13
Turbine inlet gas tem-	1378	1314	1412	1363	1263	1289	1352
	243	325	118	181	263	193	46
							1443
	1020	12,5	1030	1000	1030	1001	
	234	321	120	181	223	198	59
							73
nerature F	101	0,	01	30	30	00	, ,
	10	16	32	10	12	29	20
							1250
ture, °F							
							9:
	73	75	81	73	79	77	7!
	_		_	•	•	•	
							70
	66.8	78.8	69.2	/0./	68.9	/1.5	70.8
							-
							1.0
Turbine inside pressure, psia	40.5	71.5	44.7	47.4	40.5	44.1	40.4
Standard deviation	12.1	7.5	10.1	11.4	12.4	6.9	3.9
Turbine exit gas pres-	37.0	62.2	38.6	42.8	40.0	39.2	36.
Standard deviation	8.5	9.8	9.8	12.6	14.3	9.7	4.2
Turbine case pressure,	5.6	5.4	31.2	31.8	31.9	29.0	30.8
	N 3	0.6	4.0	3 9	4.6	3.4	1.
							0.59
							0.02
							229
	150	10,	-01		15.		
	27	34	23	25	33	31	2
							173
nerature. F	200	20,	200	200			
Standard deviation	16	42	14	15	23	16	3.7
							185
	0		-0-	-00			
	22	16	21	26	33	23	7
							194
	1,0	101	100	-/-	±/ L	107	
	22	15	22	26	33	24	-
Standard deviation	22	13	<i>_</i>	20	JJ	4	•
	Standard deviation Sample 2 temperature, °F Standard deviation Turbine inlet gas temperature, °F Standard deviation Turbine inlet gas temperature, °F Standard deviation Turbine body wall temperature, °F Standard deviation Turbine blade temperature, °F Standard deviation Turbine coolant exit temperature, °F Standard deviation Turbine inlet gas pressure, psia Standard deviation Turbine inside pressure, psia Standard deviation Turbine exit gas pressure, psia Standard deviation Turbine exit gas pressure, psia Standard deviation Turbine exit gas pressure, psia Standard deviation	Standard deviation 13 Sample 2 temperature, °F 55 Standard deviation 13 Turbine inlet gas temperature, °F Standard deviation 243 Turbine inlet gas temperature, °F Standard deviation 234 Turbine inlet gas temperature, °F Standard deviation 234 Turbine body wall temperature, °F Standard deviation 10 Turbine blade temperature, °F Standard deviation (b) Turbine coolant exit 73 temperature, °F Standard deviation 3 Turbine inlet gas pressure, 95ia Standard deviation 4.7 Turbine inside pressure, 40.5 psia Standard deviation 12.1 Turbine exit gas pressure, 5.6 psia Standard deviation 8.5 Turbine case pressure, 5.6 psia Standard deviation 0.3 Turbine il flow, gpm 0.56 Standard deviation 0.3 Turbine bearing 1 temperature, °F Standard deviation 27 Turbine bearing 2 temperature, °F Standard deviation 16 Turbine bearing temperature, °F Standard deviation 22 Turbine bearing temperature, °F Standard deviation 22 Turbine bearing temperature, °F Standard deviation 22 Turbine bearing temperature, °F	Standard deviation 13 6 Sample 2 temperature, °F 55 63 Standard deviation 13 6 Turbine inlet gas tem— 1378 1314 perature, °F Standard deviation 243 325 Turbine inlet gas tem— 1323 1279 perature, °F Standard deviation 234 321 Turbine body wall tem— 101 87 perature, °F Standard deviation 10 16 Turbine blade tempera— (b) 1198 ture, °F Standard deviation (b) 74 Turbine coolant exit 73 75 temperature, °F Standard deviation 3 Turbine inlet gas pres— 66.8 78.8 sure, psia Standard deviation 4.7 8.4 Turbine inside pressure, 40.5 71.5 psia Standard deviation 12.1 7.5 Turbine exit gas pres— 37.0 62.2 sure, psia Standard deviation 8.5 9.8 Turbine case pressure, 5.6 5.4 psia Standard deviation 0.3 0.6 Turbine oil flow, gpm 0.56 0.49 Standard deviation 0.7 0.07 Turbine bearing 1 tem— 195 187 perature, °F Standard deviation 27 34 Turbine bearing 2 tem— 163 157 perature, °F Standard deviation 16 42 Turbine bearing tempera— 173 131 ture, °F	Standard deviation	Standard deviation	*F Standard deviation Sample 2 temperature, *F Standard deviation Turbine inlet gas temperature, *F Standard deviation Turbine body wall temperature, *F Standard deviation Turbine blade temperature, *F Standard deviation Turbine blade temperature, *F Standard deviation Turbine coolant exit Turbine coolant exit Turbine inlet gas prespia Standard deviation Turbine inlet gas prespia Standard deviation Turbine inlet gas prespia Standard deviation Standard deviation Turbine exit gas prespia Standard deviation Turbine exit gas prespia Standard deviation Turbine case pressure, psia Standard deviation Turbine baring 1 temperature, *F Standard deviation Turbine bearing 1 temperature, *F Standard deviation Turbine bearing 1 temperature, *F Standard deviation Turbine bearing 2 temperature, *F Standard deviation Turbine bearing temperature, *F	Standard deviation

Table 4. - Continued.

(i) Concluded. PFB test unit data

Data	Parameter	Test							
chan- nel		T6A	T6B	T7A	Т7В	T7C	T7D1	T7D2	
187	Turbine journal bearing temperature, °F	142	113	151	141	136	145	148	
187	Standard deviation	15	11	16	18	21	15	5	
188	Turbine journal bearing temperature, °F	138	112	147	138	135	144	147	
188	Standard deviation	14	10	15	17	20	15	5	
189	Turbine oil exit tempera- ture, F	151	126	158	151	147	158	163	
189	Standard deviation	17	16	16	19	24	18	4	
190	Turbine oil in tempera- ture, °F	85	83	93	87	88	91	91	
190	Standard deviation	3	3	4	4	5	5	2	
191	Turbine brake air tem- perature, °F	47	66	81	67	70	71	77	
191	Standard deviation	10	8	11	11	18	14	9	
192	Turbine brake air pres- sure, psia	119.9	121.7	121.7	126.5	130.8	122.4	124.5	
192	Standard deviation	4.1	6.7	4.1	3.3	13.8	5.9	2.6	
193	Turbine brake air pres- sure differential, psid	5.5	3.0	4.6	4.2	5.8	5.6	6.0	
193	Standard deviation	1.5	1.1	1.2	1.2	1.7	1.1	0.8	
194	Turbine housing gas pres- sure differential, psid	17.5	10.1	21.3	21.1	21.8	21.3	21.6	
194	Standard deviation	3.0	2.9	0.6	0.8	1.0	0.6	0.3	
195	Turbine rotation 1, rpm	37532	14027	2995	1542	30632	35535	37928	
195	Standard deviation	8287	4084	4403	136	11610	8143	3070	
196	Turbine rotation 2, rpm	37873	13487	35404	32050	31818	36726	38464	
196	Standard deviation	9568	4367	8219	10896	12012	8276	3078	
197	Turbine acceleration value	0.009	0.002	0.017	0.007	0.012	0.011	0.012	
197	Standard deviation	0.002	0.002	0.009	0.005	0.006	0.003	0.002	
198	Turbine acceleration value	0.012	0.002	0.024	0.015	0.024	0.025	0.028	
198	Standard deviation	0.003	0.001	0.010	0.008	0.013	0.007	0.004	
199	Turbine purge gas tem- perature, °F	88	141	145	149	138	158	132	
199	Standard deviation	8	22	14	15	18	19	17	